The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 24. NO. 32. TULSA, OKLAHOMA, DECEMBER 31, 1925

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TABLE OF CONTENTS

SPECIAL FEATURES

Crude Oil Situation Further Improved ... 19
By Andrew M. Rowley
Price increases almost assured although delay in raise would assure greater future prosperity.

Rubber Monopoly Contrasted With Oil ... 21
By N. O. Fanning

New York Talks of Other Oil Mergers ... 22

Fundamental Research to Aid Industry ... 23

Associations File Depletion Protest ... 24

A New Year Policy (Editorial) ... 26

World Survey of Oil ... 68

World Oil Reserves and Development ... 70
By Sir Charles Greenway

Getting American Oil Workers for Foreign Fields ... 70
By N. O. Fanning

World Production of Crude Petroleum ... 74
By Charles E. Bowles

Foreign Oil Resources Summarized ... 78
By K. G. Mackenzie

European Consumption Subnormal Though Increased 78
By Edward Prizer

Mexico's Output 25,000 Barrels Less ... 82
By George Blardone

University and Technical Men in Research ... 82
By L. M. Fanning

Venezuela Oil Not Considered Menace ... 86
By Michael O'Shaughnessy

Java Shallow Sand Has Unusual Features ... 86
By Ernest Parsons

Colombia Pipe Line Ready About May 1 (Illustrated) 95

Motor Car Measure of Development ... 96
By Charles E. Bowles

Peru's Petroleum Production in 1925 (Illustrated) ... 100
By A. M. McQueen

Directors of Anglo-Persian Oil Co. (Photographs) 104-05

World Survey of Petroleum Refining ... 108
By Charles E. Bowles

Fast Growth of Automobile in Europe ... 110
By L. M. Fanning

Poland's Potential Fields Unexplored ... 114
By L. Orlowski

Ancient Document Recalls Notable Early Oil Men ... 114
By James McIntyre

Guatemala Ready to Enter Oil World ... 118
By John Eoghan Kelly

Important Developments in Rumania ... 122
By A. Beeby Thompson

Americans Not Out of Turkish Petroleum Co. ... 122

Diesel Engined Vessels Increasing ... 124
By L. M. Fanning

Recovery of Oil Industry in Russia ... 126
By Harold Kellock

Directors of Burmah Oil Co. (Photographs) ... 128

FIELD OPERATIONS

Late Fields ... 31

North Central Texas (By George F. Kelley) ... 28

Oklahoma (By C. D. Lockwood) ... 33

Kansas (By C. D. Lockwood) ... 34

North Louisiana-Arkansas (By M. L. Vaughn) ... 38

Rocky Mountain Area (By F. B. Taylor) ... 38

New Mexico (By Special Correspondent) ... 40

Gulf Coast (By P. L. McGreal) ... 42

Mexico (By George Blardone) ... 42

Southwest Texas (By Special Correspondent) ... 44

Canada (By Victor Lauriston) ... 44

California (By L. P. Stockman) ... 46

Pennsylvania-West Virginia (By D. S. Wakenight) ... 48

Central West (By Whit) ... 52

Kentucky-Tennessee (By Vern T. Whitney) ... 52

REFINING AND MARKETING

Lull in Oklahoma Market Continues ... 20
By C. O. Willson
Demand for zero cold test products as a result of cold wave responsible for minor price changes. Contracts under consideration.

Refining and Marketing News ... 175

East Feels Caution Will Aid Prosperity ... 176
By N. O. Fanning

Chicago Market Has Firm Undertone ... 177
By J. B. Waldo

Plant Operators' Page ... 179

Refinery and Crude Prices ... 180-181

Tank Wagon Quotations ... 182

Large Gasoline Yield From Crude ... 186
By C. O. Willson

Obtain Gasoline in One Operation (Illustrated) ... 188

ARTICLES OF GENERAL INTEREST

The Advertisers' Index ... 17

Natural Gas Developments ... 58

Men Known in Oildom and Personals ... 62

Equipment and Supplies ... 64

Oil Issues Advance in Heavy Trading ... 172
By N. O. Fanning

Classified Want Advertisements ... 168-169

What and Where to Buy ... 199-200-201

Crude Petroleum Statistics ... 202

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Fundamental Research to Aid Industry ... 23

Associations File Depletion Protest ... 24

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By James McIntyre

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By John Eoghan Kelly

Important Developments in Rumania ... 122
By A. Beeby Thompson

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Recovery of Oil Industry in Russia ... 126
By Harold Kellock

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Late Fields ... 31

North Central Texas (By George F. Kelley) ... 28

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Mexico (By George Blardone) ... 42

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Refining and Marketing News ... 175

East Feels Caution Will Aid Prosperity ... 176
By N. O. Fanning

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By J. B. Waldo

Plant Operators' Page ... 179

Refinery and Crude Prices ... 180-181

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Crude Oil Situation Further Improved

Highest daily average estimated production this year, week ended May 30, 2,347,984 bbls. Lowest January 3, 1,911,730 bbls.

Price Increases Almost Assured Although Delay in Raise Would Assure Greater Future Prosperity

By Andrew M. Rowley

Highest daily average estimated light oil production this year, week ended January 17, 1,525,220 bbls. Lowest July 18, 1,374,173 bbls.

Further improvement in conditions in the petroleum industry during the past week brought increased prices for crude in the Mid-Continent and Eastern areas just that much nearer although it still is believed the longer these higher prices are delayed, the longer will be the ensuing prosperity for the industry as a whole. Cold weather throughout the Mid-Continent and Eastern sections helped curtail production to an extent and will continue during this week to wield an influence upon the output of crude with the possibility that the next week or ten days will see production drop below the 2,000,000-barrel-a-day mark for the first time since last April.

For the first time since last summer, the Prairie Oil & Gas Company, major crude oil purchaser in the Mid-Continent area, reported on Monday of this week that it had not placed any crude oil in storage, that being the first day runs and shipments balanced. The Prairie has been placing considerable crude in storage, although other large purchasers had been drawing from storage. Taken in consideration with the fact premium paying is becoming more prevalent, there seems to be but little doubt the large buyers will be forced to raise crude oil prices, although they may feel increases are not justified right at this time.

A production of 2,000,000 barrels a day is too much at this time and real prosperity for the industry would be assured were the output of crude 200,000 barrels a day less than it is now. It must be remembered there are a number of promising areas in various sections of the United States where fair sized pools may be opened and that on May 1 next 30,000 barrels a day of high-grade crude will be available from Colombia. Also that the development in Venezuela should be watched carefully. The oil industry of the United States is linked closely with that of other countries on this hemisphere and operations and production in other countries are almost as important as the bringing in of new fields in the United States.

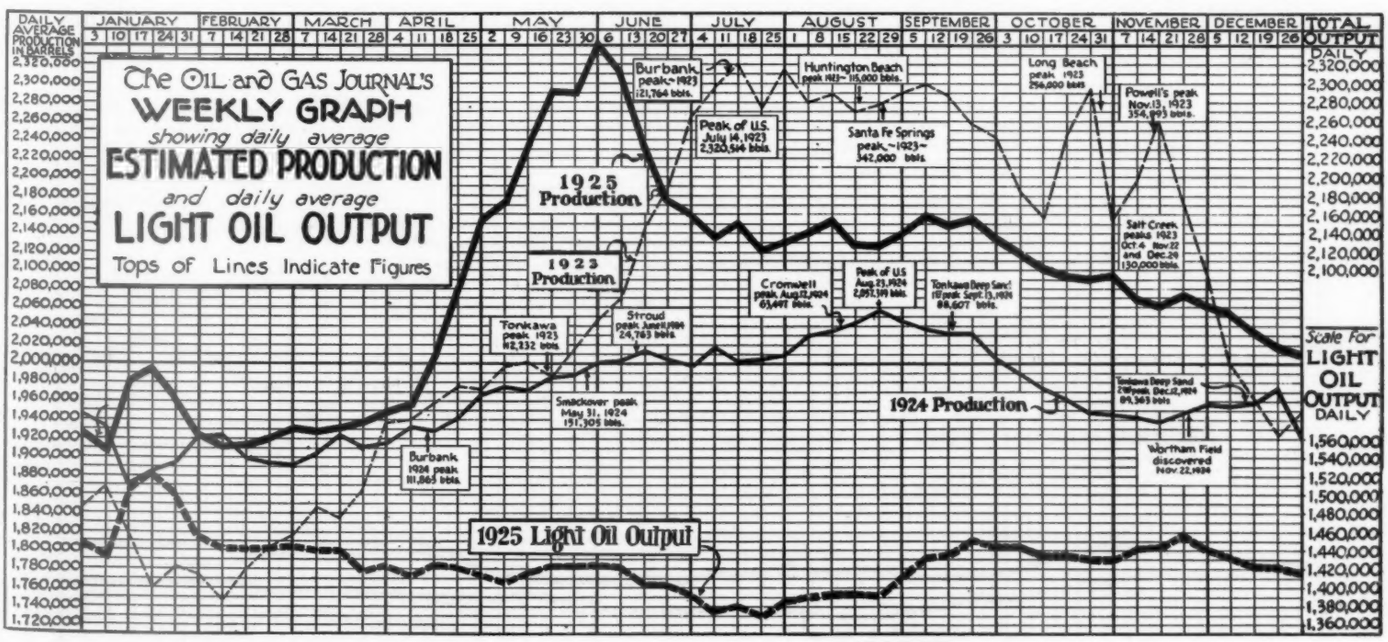
An interesting sidelight of the Garber Field in Oklahoma is the fact that on Tuesday of this week the production of water from the deep sand in that field exceeded the output of oil by 1,000 barrels, the production of oil being 26,900 barrels and of water, 27,960 barrels.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended December 26, and a comparison with the previous week follows:

	Dec. 26		Dec. 19	
	Light	Heavy	Light	Heavy
Oklahoma				
Tonkawa	41,740	.....	41,330	.....
Burbank	46,295	.....	46,805	.....
Other Osage Fields	33,380	.....	33,425	.....
Cushing and Shamrock	22,795	.....	22,790	.....
Bristow and Eastern Bristow	31,415	.....	31,270	.....
Cromwell	20,955	.....	20,845	.....
Papoose	13,645	.....	13,670	.....
Garber	35,965	.....	41,395	.....
Blackwell-Braman	8,250	.....	8,965	.....
Davenport	21,240	.....	21,570	.....
Thomas	15,580	.....	15,810	.....
Northern Miscellaneous	103 275	.....	102,010	.....
Southern Fields	65,200	.....	63,580	.....
Total Oklahoma	459,735	.....	463,465	.....
North Louisiana	45,655	.....	44,175	.....
Arkansas—				
El Dorado and Calion	7,985	.....	8,015	.....
Smackover Light	20,315	.....	20,485	.....
Smackover Heavy	.....	163,000	.....	164,570
Stephens and Nevada	3,295	.....	3,000	.....
Total Arkansas	31,595	163,000	31,500	164,570
North Central Texas	170,485	.....	170,040	.....
Powell	36,700	.....	37,215	.....
Mexia, Currie, Richland, etc.	18,870	.....	19,480	.....
Wortham	14,750	.....	14,860	.....
Kansas	102,560	.....	102,885	.....
Total Mid-Continent Area	880,350	163,000	883,620	164,570
Gulf Coast	.....	93,030	.....	93,015
Southwest Texas	.....	40,540	.....	40,355
Eastern	103,600	.....	105,450	.....
Rocky Mountain Area	103,546	.....	105,663	.....
California—				
Santa Fe Springs	51,500	.....	52,000	.....
Long Beach	110,500	.....	110,000	.....
Huntington Beach	45,000	.....	45,000	.....
Torrance	5,000	27,000	5,000	27,000
Dominguez	25,000	.....	25,500	.....
Rosecrans	22,500	.....	23,000	.....
Inglewood	29,000	35,000	28,000	37,000
Remainder of State	44,000	235,500	43,000	235,000
Total California	332,500	297,500	331,500	299,000
Total United States	1,419,996	594,070	1,426,233	596,940
Grand Total		2,014,066		2,023,173

Total Decrease, 9,107 Bbls.; Light Oil Decrease, 6,237 Bbls.


The OIL and GAS JOURNAL'S
WEEKLY GRAPH
showing daily average
ESTIMATED PRODUCTION
and daily average
LIGHT OIL OUTPUT
Tops of Lines Indicate Figures
DAILY AVERAGE PRODUCTION IN BARRELS
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
TOTAL OUTPUT DAILY
1925 Production
1923 Production
1924 Production
1925 Light Oil Output
Burbank peak 1923 121,764 bbls.
Peak of U.S. July 14, 1923 2,520,534 bbls.
Huntington Beach peak 1923 115,000 bbls.
Long Beach peak 1923 256,000 bbls.
Powell's peak Nov. 13, 1923 354,993 bbls.
Santa Fe Springs peak 1923 342,000 bbls.
Salt Creek peaks 1923 Oct. 4 Nov. 22 and Dec. 29 130,000 bbls.
Tonkawa peak 1923 82,332 bbls.
Stroud peak June 1924 24,765 bbls.
Cromwell peak Aug. 12, 1924 63,497 bbls.
Peak of U.S. Aug. 23, 1924 2,595,399 bbls.
Tonkawa Deep Sand 1st peak Sept. 13, 1924 88,607 bbls.
Smackover peak May 31, 1924 151,305 bbls.
Burbank 1924 peak 111,865 bbls.
Tonkawa Deep Sand 2d peak Dec. 12, 1924 89,363 bbls.
Wortham Field discovered Nov. 22, 1924
Scale For LIGHT OIL OUTPUT DAILY

Lull in Oklahoma Market Continues

Demand for Zero Cold Test Products as a Result of Cold Wave Responsible for Minor Price Changes. Contracts Under Consideration

By C. O. Willson

The Oklahoma (Group 3) refined market during the past week continued to mark time awaiting the first of the new year when more activity is expected in several oil products. Many sales offices were closed from Thursday noon of last week until Monday morning. Some buying was reported on Monday and Tuesday but the marketing fraternity generally did not expect any important developments until the first of next week.

The cold wave which during the past few days visited the territory in which Oklahoma and other Mid-Continent refiners sell their products is held responsible for the minor price changes which have developed during the past few days. The cold weather aided the demand for fuels and distillates especially those grades which meet zero cold test requirements. Jobbers selling distillates at Middles Western points reported a large overnight increase in their tank wagon deliveries. These jobbers apparently had considerable storage on hand for they have been slower than was expected in replenishing their supplies from their refinery connections. However, on Monday and Tuesday of this week more orders were being received in Oklahoma with indications that the movement would continue to improve over the week. Refiners were inclined to advance their prices slightly.

Closely associated with this improvement in fuel oil and distillates was the scarcity of kerosene. This product has had a secure position for several weeks and any increase in demand will result in still higher prices. Several refiners advanced their quotations ⅛ or ¼-cent the first of the week.

Several refiners are expecting January to bring peak prices in kerosene and all products used as fuels and are handling their sales accordingly. This view is supported by developments last year and the year before when January and early February prices were higher than any other time of the year.

In regard to fuels buying generally begins to decline after January, many consumers ordering their requirements for the balance of the winter season at that time. Kerosene, because of the similarity of the products, usually closely follows any advance in the distillate prices.

The cold weather which aided fuel products had the opposite effect on gasolines. Although prices were generally firm the first of this week it was not due to any improvement in demand. Cold weather such as has been experienced in the Middle West reduces gasoline consumption to a minimum and jobbers are in a position to postpone their purchases from refiners.

As has been explained in these columns recently, the January gasoline market is closely linked with crude price developments. Higher posted crude prices are believed to be the logical developments of the tight crude situation existing in Oklahoma and other parts of the Mid-Continent. Refiners naturally hope to offset these advances with higher gasoline prices and the anticipation of both developments is the explanation of today's market. If the crude advances are postponed for a time as some believe market observers do not look for any marked change either up or down in gasoline prices. Should the crude advances start after the first of the year they will be reflected immediately in higher gasoline prices.

With little activity in the spot market there was considerable discussion during the past weke regarding gasoline and fuel oil contracts for 1926. In regard to gasoline, refiners and jobbers are slow in getting together on long time agreements and it is now certain that the new year will open with fewer contracts than any previous time in several years.

One large refiner which in the past has disposed of the bulk of its gasoline output through yearly contracts has up to the present time not renewed more than one-fourth of its old agreements. Another refiner expects to drop practically all of his contracts. Many agreements are, of course, being renewed without discussion but for the Mid-Continent refining industry as a whole contracts are not receiving their accustomed support.

Jobbers' Attitude

Many jobbers are taking the position that since many of the refiners will not consider any contract except that based on the spot market as determined from trade journal quotations, they have nothing to gain by long time agreements. Several have announced their intention of buying on the spot market from week to week. On the other hand refiners with several sad experiences in mind are shy of agreements which guarantee the jobbers minimum margins based on tank wagon schedules.

Developments after the first of the year may change this situation and more contracts will be closed. If not the Oklahoma tank car price will be more a factor in gasoline markets than ever before. Some of the sellers have expressed the opinion that it will be better for the refiners to keep away from contracts and depend on the open market to sell their gasoline output. Others fear that it will increase speculation and bring greater fluctuations in prices.

Fuel Oil Contracts

Many fuel oil contracts between Oklahoma refiners and southwestern railroads expire January 1 or the following month. At least two of the railroads are refusing to renew the contracts on the old basis. Generally these railroad contracts have netted the refiner 15 or more cents per barrel for the year than they would have obtained had they sold their fuel oil on the open market. Many of these contracts were made last year before crude prices were advanced. Starting with a base price of $1 per barrel with 60 per cent of the crude advances, some of the contracts netted the refiner approximately $1.50 per barrel when crude prices reached their peak quotations of the year. During the summer months these contracts were approximately 50 cents higher than the spot quotations.

These contracts are still netting the refiners from 5 to 10 cents more than the prevailing spot price of $1.25 to $1.30. One contract offered by one of the larger buyers for the coming year calls for a base price of $1.20 with 60 per cent of any price change in the posted crude schedules of 36 degrees gravity crude with no maximum or minimum prices. If this contract is accepted it obviously means that refiners the coming year will not receive as much for their fuel oil in relation to the crude price as they have in the past. Another railroad is reported to have tentatively offered a flat price of $1.25 over the year.

So far as known refiners have not accepted these offers. Crude prices are con-

(Continued on Page 31)

REFINED MARKET BAROMETER

The few price changes which occurred in refined markets during the past week were generally upward. In some areas refiners advanced prices on several products. Cold weather had given impetus to the demand for all refined products used as fuels and fractional price advances on several grades of fuel and furnace oils were reported from several refining centers. Kerosene prices were also advanced in some sections. Gasoline prices were generally steady with advances expected within the next ten days. Natural gasolines were advanced on the west coast and continued firm in the eastern fields. Movement of lubricants and wax featured export market. Some grades of eastern lubricants advanced as a result of higher crude prices in Pennsylvania.

Mid-Continent—Gasoline market firm despite dearth of new orders. Demand for Grade C features natural gasoline market. Absorption grades firm. Improved demand for fuel oils and distillates with prices advanced wherever any changes were announced. Gas oil prices slightly higher. Lubricants firm.

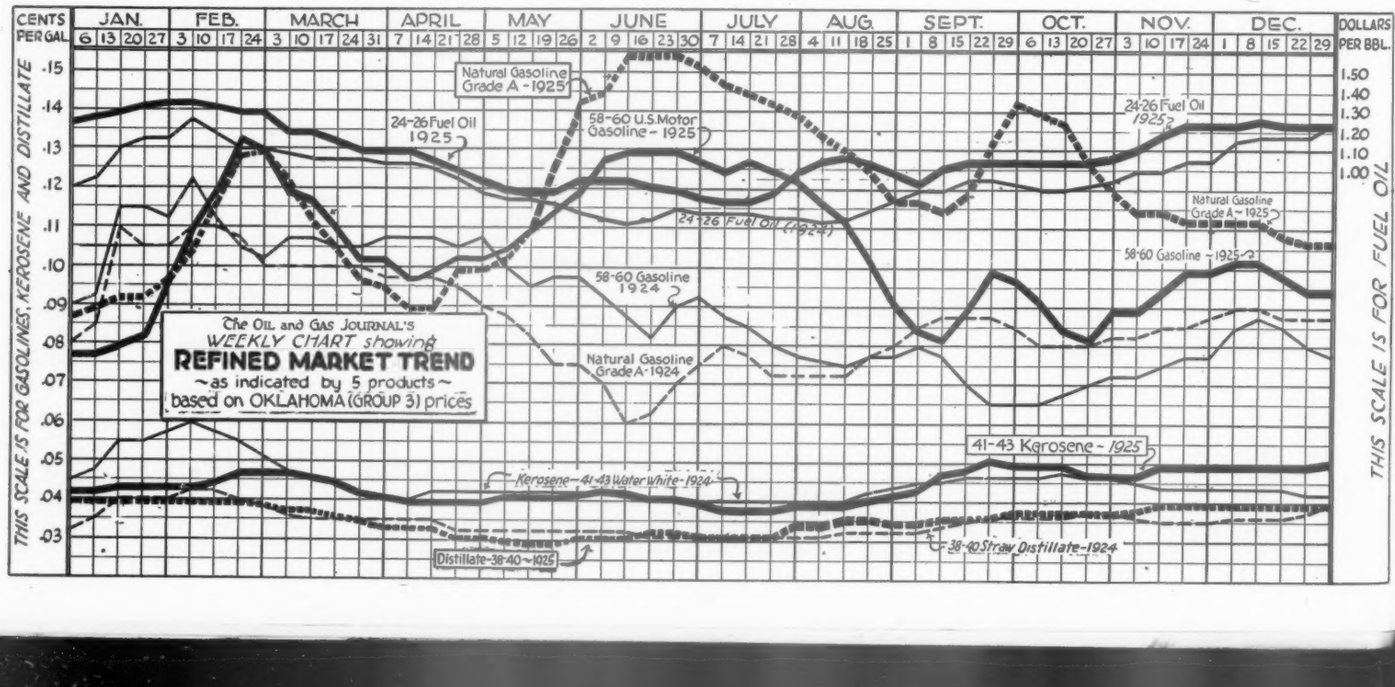
Atlantic Seaboard—No change in gasoline situation. Kerosene firm. Strong demand for furnace oils. Demand for fuel oils points to higher prices in near future. Heavy export movement of lubricants. Cylinder oils higher.

Pennsylvania—Prices on gasoline, kerosene and fuel oils firm. Some grades of cylinder stocks advanced.

California—Recent advances in gasoline tank wagon prices aids domestic gasoline grades which were advanced 2 cents. Export grades also slightly higher. Natural gasolines advanced 2 cents. Other products unchanged.

Chicago—Cold weather slows up gasoline demand and aids movement of fuels and distillates. Kerosene prices higher. Lubricants firm.

Gulf Coast—Prices unchanged.



Rubber Monopoly Contrasted With Oil

British Squeeze on Tire Users Compared to American Prices for Gasoline at Home and Abroad. No Export Tax Here

By N. O. Fanning

NEW YORK, Dec. 28.—After a study of the present world's rubber situation, the American autoist can be thankful that the majority of the world's petroleum is produced in the United States by American companies.

Of the world's production of crude rubber, more than 90 per cent is produced by British and Dutch companies. According to W. H. Rickinson & Son, of London, publishers of the "World's Rubber Position," 1924 production of crude rubber amounted to 421,217 long tons, of which 296,770 tons were produced by British companies and 96,617 tons by Dutch, making a total of 393,387 long tons, or 92.6 per cent produced by British-Dutch interests combined. Estimated production of crude rubber in 1925 is 490,000 long tons, and the proportion controlled by the British and Dutch is the same as in 1924, or over 90 per cent.

That the United States, including largely the American motorist, is paying dearly for foreign control of crude rubber is generally known. In the first nine months of 1924 it is estimated American manufacturers paid $119,000,000 for 514,400,000 pounds of crude rubber, while in the corresponding period of 1925, they had to pay $258,000,000 for only 637,300,000 pounds. This is an average of 45 cents per pound this year, as compared with 23 cents in 1924, a gain of almost 100 per cent, and the present price of rubber is around 90 cents per pound.

The "Statist," of London, commenting on the rubber situation, says that unless the rate of consumption of rubber is severely curtailed, it appears probable by 1928, and possibly by 1927, consumption actually will be in excess of full production, not merely in excess of the permitted exports at present. This would indicate that the advance in the price of rubber so far has been due in part, at least, to the centralized control of the commodity, with the outlook that the law of supply and demand will act to further raise the price within the next year or two.

The statement made in Washington that "we see the British laughing at us and openly proclaiming that they propose during the next six years to collect $4,000,000,000 by charging this country excessive and extortionate prices for rubber" is probably somewhat farfetched, inasmuch as America would have means of protecting itself, to some extent at least, both by developing its own crude rubber production and by raising prices of products which the British must buy from us.

World Oil Situation the Reverse

A comparison of the world oil and rubber situation provides much food for thought on the part of the American public and the politician who is prone to find fault with the American petroleum industry.

The world's rubber is not only controlled by companies with British and Dutch capital, but it is understood that the Government regulation of the rubber plantations, from production to exports, is unusually severe. This is in direct contrast to the American oil situation. American oil production is controlled by numerous companies, not one of which controls more than 15 per cent. The so-called "Standard Oil" group does not control more than 40 per cent, divided among at least a dozen companies, operated independently.

There is no export tax on oil, although foreign governments in many cases lay heavy import duties on the American product, which doubtless acts to restrict consumption materially. Despite the fact that American companies are restricted in their attempts to develop crude oil production in British or Dutch controlled countries, British, Dutch and other foreign concerns are operating in the United States under the same conditions, apparently, as are American companies.

Yet, judging from a statistical viewpoint, the United States is in a position to control the world's oil situation, producing as it does at least 70 per cent of the world's output.

In 1924 the United States produced approximately 714,000,000 bbls. of crude against 1,000,000,000 bbls. for the entire world. In addition American controlled companies produced approximately 100,000,000 bbls. of crude oil in other countries, principally Mexico, giving American interests control of more than 80 per cent of the world's output. Production in 1925 will show about the same proportion.

In the first nine months of 1925 American companies received approximately $313,000,000 for the 2,870,000,000 gallons of crude and refined oil exported, against $299,000,000 for 2,945,000,000 gallons exported in the same period of 1924, an increase of only about 4.6 per cent. Exports in the 1925 period averaged less than 11 cents per gallon, against approximately 10 cents per gallon in 1924. This comparison certainly does not indicate extortion on the part of the American oil industry in its dealings with foreign consumers.

In addition, foreign oil companies produce crude oil and refine it in the United States and export it abroad where it is sold in competition with American concerns.

British-Dutch In Oil

Strange to say, just as the British and Dutch together control the world's supply of rubber, the same nations are the strongest competitor of the United States in petroleum. The Royal Dutch-Shell combine, the largest oil company in the world outside of the Standard Oil Co. of New Jersey, is controlled 60 per cent by the Dutch and 40 per cent by the British. The Dutch-Shell combine is the dominant interest in oil in the Dutch East Indies and in Venezuela.

The Anglo-Persian Oil Co., controlled by the British Government, is the second largest foreign oil corporation, controlling the entire crude oil production of Persia and being allied with the Burmah Oil Co., which controls the production of crude oil in India.

The crude oil output of the Dutch-Shell and Anglo-Persian-Burmah groups in 1924 was about as follows:

	Bbls.
Persia	32,000,000
Dutch East Indies	21,000,000
Venezuela	9,500,000
India	8,150,000
Sarawak	4,500,000
United States	30,000,000
Total	105,150,000

In addition, British companies control the bulk of the output of Trinidad, which in 1924 was 3,844,000 bbls., and Egypt, which was 1,107,000 bbls. British and Dutch concerns control approximately 10 per cent of the world's oil output. This does not include the output of Peru, which is controlled largely by a company which, although managed by the Standard Oil Co. of New Jersey, is incorporated under the laws of the Dominion of Canada.

The Shell Union Oil Corp., a subsidiary of the Royal Dutch-Shell combine, is one of the largest oil operating companies in the United States, engaging in all branches of the business.

International Oil Situation

The present situation in rubber has no analogy to any situation in the petroleum industry, so far as the writer can determine. In 1920 there was a shortage of petroleum, and prices were comparatively high. In that year the United States exported oil to the value of $500,000,000, a record, representing the approximate price all foreign buyers, combined, had to pay to American exporters.

In that year there was considerable agitation both in the United States and Great Britain, with regard to oil prices and control of petroleum supplies. Strange to say, however, the talk in the press in that year was more concerning a possible future British control of oil supplies than of current American control, indicating that there was no intense feeling abroad that American oil interests were exploiting foreign buyers of petroleum products.

On the other hand, politicians in this country were loud in their criticism of the American oil industry because of the comparatively high prices then existing for gasoline in the United States.

In 1920 the British Board of Trade made an investigation and turned in a report charging both American and British-Dutch concerns with making excessive profits in the sale of gasoline in Great Britain. The LaFollette report in this country made in 1922 was a belated shadow of the oil shortage of 1920. It predicted "dollar gasoline." Since then gasoline has average close to 20 cents, retail.

As to the alleged policy of certain foreign countries toward petrolum development, especially by Americans, the State Department at Washington rendered a report in 1920, which said, in part, "Great Britain has an oil policy designated to bring about the exclusion of aliens from the control of petroleum supplies of the Empire, and to endeavor to secure some control over oil in foreign countries, along the following lines:

"1. By barring foreigners and foreign nationals from owning or operating oil properties in British territory.

"2. By direct participation of the Government in ownership and control of oil companies.

"3. By preventing British oil companies from selling their properties to foreign interests.

"4. By prohibting the transfer of shares in British oil companies to other than British interests."

Regarding the Dutch oil policy, the report states: "All the companies drilling for oil in the Sumatra East Coast region, a colony of Holland, are controlled by a holding company of The Hague. In the Dutch East Indies prospecting licenses and holdings are granted only to Dutch subjects. Much of the archipelago is closed to private operations for State exploitation and American companies for many years have been unsuccessful in getting leases. The Royal Dutch-Shell combine has a complete economic monopoly of production."

Sir John Cadman, the noted British authority on oil and a director of the Anglo-Persian Oil Co., said in regard to British policy:

"It is most unfortunate that the press of this country and the press of the United States should be hurling wild statements about, many of which are most misleading and inaccurate. It has been stated that Great Britain is developing an oil policy which definitely excludes the foreigner from participating and developing any of the Empire's 2½ per cent production today, and that she is deliberately shutting the door to foreign capitalists. To these statements which have appeared in the press the following comments may be offered:

"1. Certain requirements as to British directorates and domicile are im-

(Continued on Page 171)

OIL MEN CONTRIBUTING TO FUND FOR DAVID F. CONNOLLY MEMORIAL

Notwithstanding the fact the Christmas holidays absorbed most of the attention of oil men throughout the country during the past week, there were a number who found time to send in contributions to the David F. Connolly Memorial Fund to be used to establish an X-Ray department in St. John's Hospital, Tulsa. Mr. Connolly, who died recently while making an address in connection with the campaign to raise funds for the hospital, had promised the authorities at the hospital he personally would raise the funds for the equipment of the X-Ray department. His sudden death prevented his carrying out his desire and the Tulsa Daily World started the movement to have friends of Mr. Connolly in the oil business subscribe the $10,000 needed to carry out the project. The Oil and Gas Journal has joined the Tulsa Daily World in the movement and will make suitable acknowledgment of all contributions and turn these over to the proper authorities.

Frank Phillips, president of the Phillips Petroleum Co., wired his support of the plan and sent a check for $250 as his contribution to the fund. It is believed enough oil men who knew David Connolly will come forward within the next few days to assure the success of the memorial plan. Few oil men had as many friends in oil fields throughout the country and in the executive offices of the large companies as did Mr. Connolly.

Charles F. Doran, superintendent of stocks and storage for the Carter Oil Co., has written the following tribute in verse which expresses the sentiment held by close acquaintances of Mr. Connolly who knew of his interest in the things that make for the good of mankind:

Dave F. Connolly

Who can conceive more glorious death
Or nobler life? Whose every breath
Was redolent with kindness
For his fellow man.
A MAN he lived—a MAN he died,
And never shall the rising tide
Wipe out his "footprints in the sands."
Unconsciously, perhaps,
We copy other men.
Since this is true, why then,
Shall we not paint our picture
From a life so grand?
Dave Connolly,
Were I to write your epitaph,
My words would be but few.
I'd only ask the Good, Great God,
To make more men like you.

—CHARLES F. DORAN.

New York Talks of Other Oil Mergers

New Jersey Company Linked With the Names of Tide Water and the Texas Co. Barnsdall, Simms, Texas Pacific and Waite Phillips Rumor

By N. O. Fanning

NEW YORK, Dec. 28.—The merger of Pacific Oil with Standard of California removes another large independent oil organization from the list, along with Magnolia Petroleum, Humble Oil & Refining and Pan American Petroleum & Transport Co., all of which have been taken over by Standard Oil companies.

It is understood that while no exchange of stock will be effected between the new Standard Oil Co. of California and Associated Oil, the latter will continue as a subsidiary of the consolidated company.

Readers of The Oil and Gas Journal were not surprised at the announcement of the merger of the California properties, which had been repeatedly forecast in the Journal's columns as a logical development.

It is interesting that each time there has been a big merger or acquisition by a Standard Oil unit, that unit has been compared in size with the Standard Oil Co. of New Jersey. Three concerns, Standard of New York, Standard of Indiana and Standard of California, have figured in these consolidations. Since its acquisition of control of the Humble Oil & Refining Co., the Standard Oil Co. of New Jersey has not been mentioned as acquiring any big independent units.

Nevertheless, in point of assets, the Standard Oil Co. of New Jersey, judging from its balance sheet, still surpasses any of the new combinations of its former subsidiaries. But the question is as to whether the Jersey company will not figure itself within the next 12 months or so, in a merger.

The Standard Oil Co. of New Jersey is apparently in the position of having to meet competition from its former subsidiaries in much stronger array than has ever been the case before. The Standard Oil Co. of Indiana, through Pan American Petroleum and its indirect interest in Sinclair, is stalking the Jersey concern in its own marketing territory on a formidable scale.

Both Magnolia Petroleum and Pan American are competitors of Standard of Louisiana and Humble Oil & Refining Co., the latter Standard of New Jersey subsidiaries.

The Standard Oil Co. of California alone is not a direct competitor in the marketing territory of the Standard Oil Co. of New Jersey, so far as is known. Indirectly, however, the California company competes with the Jersey company in European markets.

Tide Water and The Texas Co.

The Tide Water Oil Co. and The Texas Co. are both spoken of in certain quarters as companies which may, in the not distant future, come under the wing of the Standard Oil Co. of New Jersey. In fact, it is understood Standard of New Jersey controls pretty close to a majority of the stock of the Tide Water Oil Co. at the present time.

Tide Water is one of the biggest independent oil units in the country, and the only one having a big refinery at Bayonne outside of the Standard Oil Co. The Tide Water Oil Co. is a big marketer of gasoline, not only in the territory of the Standard Oil Co. of New Jersey, but also that of Standard Oil Co. of New York and Atlantic Refining Co.

Control of both Tide Water Oil and The Texas Co. would strengthen Standard Oil Co. of New Jersey's position as a competitior of Pan American Petroleum and Sinclair in the Atlantic Seaboard gasoline markets. Both Tide Water and The Texas Co. have extensive seaboard loading and shipping facilities, a feature which, it is believed, would especially appeal to an organization of the type of the Standard Oil Co. of New Jersey, with large crude production abroad.

Furthermore, The Texas Co. is a big factor in the Southwest, and its operations extend throughout almost every State in the Union, as a marketer of petroleum products.

The tendency now on the part of the Standard Oil companies is to do away with the old State line boundaries and to invade one another's territory. The Standard Oil Co. of New Jersey, more than any other, seems to have kept inside its old limits in recent years.

It is understood that Standard Oil Co. of New Jersey already has a substantial stock interest in The Texas Co., which has been held many years as an investment.

Gulf Oil's Position

If control of The Texas Co. and Tide Water should come under the Standard Oil Co., the Gulf Oil Corp. would remain as the only large independent oil organization with assets of many hundred millions of dollars, controlled by American capital. Efforts to bring Gulf Oil into a consolidation with the Standard Oil Co. of Indiana some years ago were unavailing, and it is understood Gulf Oil's position remains the same as before those negotiations were instituted.

The Gulf Oil Corp., controlled by the Mellon family, of which the Secretary of the Treasury is a leading member, has had an extraordinary growth, a growth unusually well balanced in every department of the petroleum industry. With its Port Arthur refinery system the keynote, the company has kept its crude oil producing and its marketing operations up to its refining capacity to a degree seldom ever equalled by such a large organization.

In addition, the Gulf Oil Corp. has maintained an unusually successful marketing organization, extending into many section, yet not lacking that degree of unity so necessary to economic development.

The various mergers which have recently been accomplished have provided increased competition to the Gulf Oil Corp., as can easily be seen, especially that of the Standard Oil Co. of Indiana —Pan American Petroleum & Transport Co. The latter company has Gulf Coast refining facilities, a large tanker fleet, and is extending its marketing operations throughout the territory covered by Gulf Refining.

Incidentally The Texas Co. is an organization quite similar to Gulf Oil, having had its beginning in the Gulf Coast field. In producing, refining and marketing operations, the two concerns are closely parallel.

Dutch-Shell Represented

The Royal Dutch-Shell organization, Shell Union Oil Corp., is another ranking oil company operating in the United States. It is no secret that this concern offers lively competition to both American Standard and independent concerns.

The Standard of California-Pacific Oil merger is probably a direct reflection of this competition, a statement which can be made with greater assurance since Standard of California stated when it made its original investment in Pacific Oil in 1920 that it did so to offset alleged efforts made by the Dutch-Shell combine to get control of Pacific Oil.

The Shell Union Oil Corp. also has a big organization in the Southwestern oil district of the United States, being represented there principally by the Roxana Petroleum Corp.

The development of big American-controled oil units through consolidations is apparently a necessary means of meeting competition by the Dutch-Shell combine in this country and abroad. The Dutch-Shell, being strongly backed financially, is in a position to use that means to the fullest extent itself.

Following the purchase of the Waite Phillips Co. by Blair & Co., it is now rumored that consideration is being given to a new combination, including the Waite Phillips Co., the Barnsdall Corp., the Simms Petroleum Co., Texas Pacific Coal & Oil Co. and one other company.

STANDARD OF CALIFORNIA CO. MERGERS WITH THE PACIFIC OIL COMPANY

SAN FRANCISCO, Calif., Dec. 26.—Consolidation of the Pacific Oil Co. and the Standard Oil Co. of California is announced by Henry W. de Forest, chairman of the board of the Pacific Oil Co. Kenneth R. Kingsbury, president of the Standard Oil Co. of California, and Paul Shoup, president of the Pacific Oil Co., and the Associated Oil Co. issued supplementaly announcements on the merger. The merger is subject to ratification by shareholders.

Outstanding capital stock of the Standard Oil Co. of California is about $235,-228,447 and of the Pacific Oil Co. $66,-000,000. The Associated Oil Co., which is controlled by Pacific Oil, is not affected by the merger.

The two oil companies will be merged by an exchange of stock to be issued by the consolidated company for stock in the two present companies.

The consolidated company will issue one share of its stock for each share of the stock of each of the two consolidating companies, the Pacific Oil Co. having outstanding 3,500,000 shares and the Standard Oil of California about 9,500,-000 shares. The Pacific Oil Co. will reserve for distribution among its stockholders, by dissolution or otherwise, 1,-229,575 shares of Associated Oil Co. stock and other assets of an estimated value in excess of $20,000,000 after deducting all liabilities, including the dividend on the stock of the Pacific Oil Co. payable January 20.

The consolidated company will take over all assets and liabilities of the Standard Oil of California. It also will take over all assets of the Pacific Oil Co., except those noted, but the Pacific Oil Co. will settle its own liabilities. Definite agreements are being prepared.

In explaining the details of the merger Mr. Kingsbury's statement said:

"The stock of the consolidated company will be issued to each of the two present companies in the same proportion as their present outstanding stock. The consolidated company will have all assets of the Standard Oil Co. of California and all producing properties owned by the Pacific Oil Co. The present crude oil production of the Pacific Oil Co. is 55,000 bbls. per day and the company owns approximately 261,000 acres of land in fee, all located in the San Joaquin Valley in California.

"The relations between the two companies since the formation of the Pacific Oil Co. in 1921 have been close, the Standard Oil Co. having been a large stockholder in the Pacific Oil Co., and the oil exchange between the two companies having been extensive. It is a natural development that the two companies should be merged, the result being a very well balanced company as to oil reserves, transportation, manufacturing and distribution.

"The Standard Oil Co. will not retain a stock ownership or any other interest in the Associated Oil Co. The direction of the consolidated company will be under the management of the present Standard Oil Co. and the present organization of the Pacific Oil Co. will be maintained as far as possible."

Explaining the position of the Associated Oil Co. in the merger, Mr. Shoup said:

"The arrangement looks to the independence of the Associated Oil Co. and the continuance of its present efficient organization and the protection of its light crude supply by such continuance of relationship covering exchange of oil with the Pacific Oil Co. as is necessary to that end."

NATIONAL RAILWAYS TO ERECT STORAGE

According to Ocaranza Llano, head of the petroleum department of the National Railways, plans have been made for the erection of a total of 3,500,000 bbls. of steel storage at six points along the railway.

One million barrels will be erected at San Luis Potosi, which is about half way between Laredo and Mexico City, and the scene of the greatest daily railroad activity in the Republic for both passenger and freight traffic. Tanks for 500,-000 bbls. each will be erected at Mexico City, Aguascalientas, Irapuato, Torreon and Monterrey.

National Railways also will erect ten 55,000-bbl. steel tanks at Mendez, San Luis Potosi and at a gathering point for its production along the right of way on the Tampico-San Luis Potosi division. At present it has but 10,000 bbls. storage to handle a potential production of 75,-000 bbls. daily.

DEATH OF M. C. TREAT

M. C. Treat, retired oil producer, died at his home in Pasadena, Calif., on Tuesday, December 22. Deceased was widely known in the Eastern fields where he had operated in the busiest years of that producing division. Mr. Treat was at one time a member of the firm of Treat & Mallory, with L. E. Mallory as partner, operating in the Bradford Field, and later for many years of the firm of Treat & Crawford, with George W. Crawford as a partner. He was one of the pioneers in the Colombian Field with Benedum & Trees (Tropical Oil Co.), and was a heavy stockholder in and one of the founders of the Ohio Fuel Supply Co., which later grew into a tremendous organization, the Ohio Fuel Corp. He was also a stockholder in the Oklahoma Natural Gas Co. Mr. Treat disposed of much of his old and gas holdings some years ago, and retired. He was a man of broad charity and was much interested in the welfare of boys who had a desire to make the most of their lives, and it is said of him that he provided for the education of young men in Washington and Jefferson College, at all times keeping the number up to 20. His son, Ellis Treat, of Buffalo, N. Y., was with his father when death came.

Fundamental Research to Aid Industry

Rockefeller Gift to Give Impetus to This Angle as Distinguished From That of Applied Research

By L. M. Fanning

The initiation of a petroleum research program now provided by the Rockefeller donation to the American Petroleum Institute may well mean that the scientific era in petroleum has definitely set in.

What this portends as regards conservation of supply and the development of new products and of new methods of production, manufacture and marketing presents a fascinating field for conjecture. The tendency is probably to overstate the possibilities, but the fact remains that petroleum in its occurrence and properties gives a wide range for geological, physical and chemical investigation and unusual opportunities for epochal results.

Anyone familiar with the progress of the oil industry in recent years is impressed by the increasing amount of scientific work that has marked its operations. However, it was generally recognized that organized research along fundamental lines was necessary.

That this is patent may be readily seen when it is considered that some of the basic scientific facts related to petroleum are still buried deep in obscurity. To attempt their exploration requires time, money and specialized training on the part of the explorers—an outlay and equipment and objective related to and still remote from the logical activities of individual companies no matter how far they have progressed in research work as essential to their operations and expansion.

Fundamental Research

The difference lies in fundamental research as distinguished from applied research. The program now being initiated is one of fundamental research designed to establish the facts about petroleum. Applied research takes the facts, correlates and applies them to fit into a definite problem.

The work thus far done—and some of it of truly revolutionary character as, for instance, cracking—has been applied research. Companies and individuals have developed technological processes and specialized appliances to meet certain conditions and to solve certain definite problems related to the recovery of oil and plant operation—most of this development being on the order of increased efficiency essential to profitable operation.

Moreover, in this work of applied research it is a startling fact that most of it has been rule of thumb research. It has been necessary to take the thing at hand and to adopt empirical methods in the working out of the particular problem. Without knowledge of the physical and chemical constants that govern petroleum, rule of thumb research has been the only way possible. At best it is an expensive and laborious way of making progress.

Viewed from this angle, the opening up of organized research along fundamental lines takes on a very important complexion in its direct relation to the industry. If results can be obtained which will give to the industry certain basic principles and gradually obviate the rule of thumb vogue there is immediately visible a tremendous actual saving in research work, to say nothing of the certainties that would attach to such work as against present uncertainties. A lot of experimental work now necessary would be entirely needless.

Work of Companies

It is impossible to estimate how much the petroleum companies are now spending annually for research, and, in fact, it is practically impossible for companies to differentiate between necessary scientific work in connection with plant operation and pure research. An official of a company which conducts a great amount of research work stated he could not make such a distinction.

The industry might, as a guess, cut down probably $5,000,000 a year if it were possible to limit scientific work to the conduct of the business and if pure research were undertaken wholly outside the companies. This figure might be representative of the present expenditure for research, although higher estimates are usually ventured.

The great advances that have been made in the art of distilling, in purifying oils, in the adaptation of oils to new uses and the discovery of new markets for petroleum products have come along out of research of the applied character. These are the developments that have grown logically with the expansion of the business, and there will be further advances in this direction even though reliance on rule of thumb research mostly prevails.

The oil companies are able to take care of scientific work of this character, and one of the essential things in working out a fundamental research program is, according to those who are giving the matter close attention, to differentiate between what is being, and can be, accomplished by the companies themselves and what is outside of their natural field.

Fundamental research and applied research overlap to a certain extent. To draw a definite line between the two is practically impossible. There are problems of fundamental character any part of whose solution would mean the opening up of new and intensive, applied research.

As illustrative of the field presented for fundamental research under the fund just established, the suggestion is made that work be carried on on the chemical components of petroleum. More knowledge in this direction would mean a better refining technique, better products, and probably many new products.

Another illustration regards the unsaturate constituents of petroleum: a determination of what they are. This would carry possibilities of great advances in the treating of cracked gasoline.

Sulphur is a major problem. Fundamental research would be along the line of establishing the nature of the sulphur compound in oil.

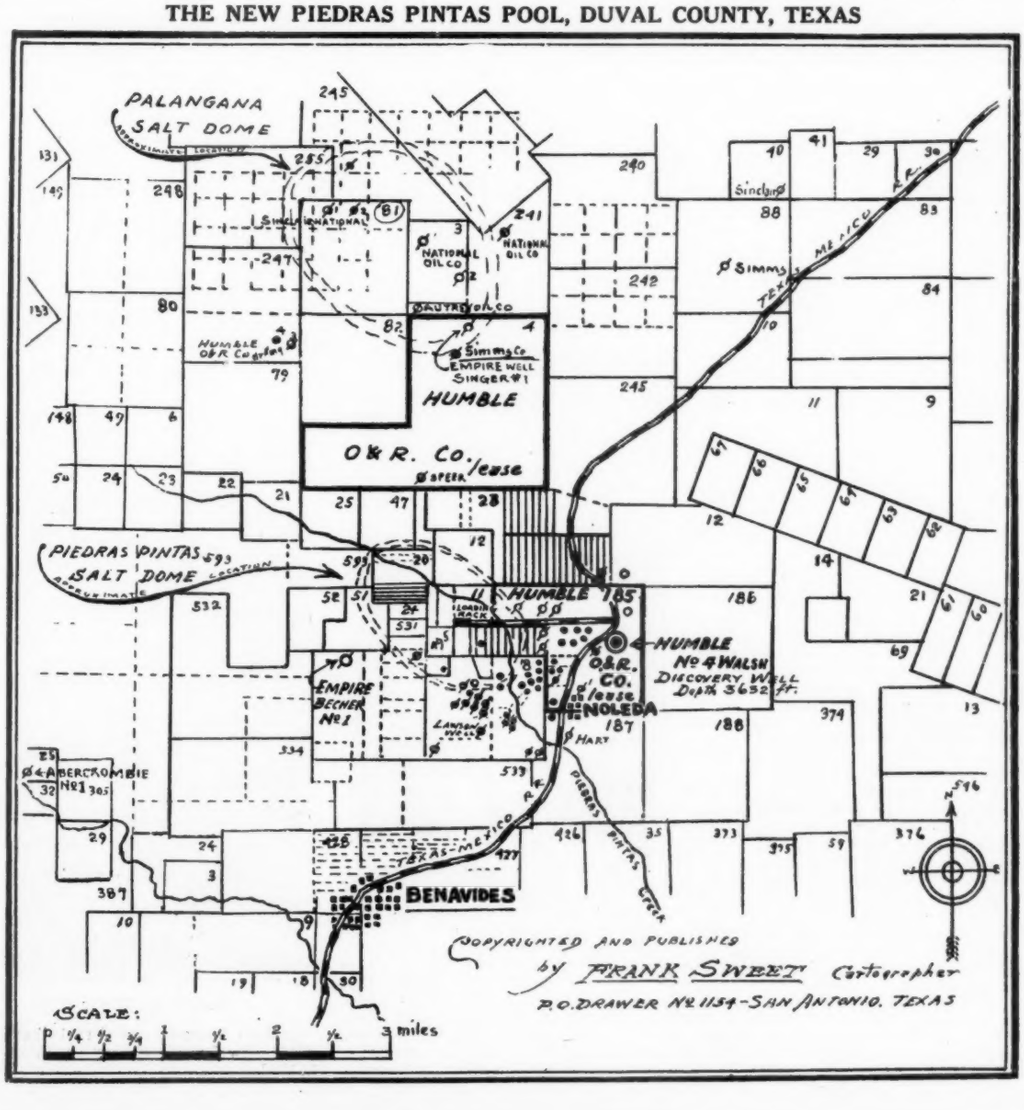
As regards gasoline, a suggested field for fundamental research is gasoline's chemical relation of anti-knock; as regards kerosene, research on the burning quality of oil, and as regards lubricating oil, determination of the constituents of naphthene and paraffin base crudes as a means of getting at relative values.

Origin of Oil

On the finding side of the petroleum industry projects for fundamental research include the question of the origin of oil which is little understood and very little studied; studies of the source beds of oil together with the concentration, migration and accumulation of oil and gas; studies of oil reservoirs and the relationship of the gas, oil and water in them; correlation of oil sands, and

(Continued on Page 171)

THE NEW PIEDRAS PINTAS POOL, DUVAL COUNTY, TEXAS



Associations File Depletion Protest

Mid-Continent Oil & Gas and Other Oil Organizations Unite in Petition to the Finance Committee of United States Senate

The discovery depletion provision of the Federal income tax bill, pending in Congress, is thoroughly analyzed in a petition to the Finance Committee of the United States Senate prepared by the Mid-Continent Oil and Gas Association after a series of conferences and agreed upon by the Chamber of Mines and Oil, California; New Mexico Oil Men's Association, New Mexico; Kentucky Oil Men's Association, Kentucky; Rocky Mountain Oil and Gas Association, Rocky Mountain Region; Rocky Mountain Oil and Gas Association, Montana Chapter; Northern Pennsylvania Oil Producers' Association, Appalachian Region, and the National Association of Independent Oil Producers, petitioners, representing the majority of the independent oil producers of the United States, respectfully invite the attention of members of the Finance Committee to Subdivisions (c) and (d) of Section 204 of the pending revenue bill. These subdivisions relate to the subject of the depletion deduction allowed mining and oil producing taxpayers. They constitute, as to oil and gas wells, a radical departure from the provisions of the existing law and are of great economic importance. They read as follows:

"(c) The basis upon which depletion, exhaustion, wear and tear, and obsolescence are to be allowed in respect of any property shall be the same as is provided in subdivision (a) or (b) (cost or value as of March 1, 1913), for the purpose of determining the gain or loss upon the sale or other disposition of such property, except that—

(1) In the case of oil and gas wells discovered by the taxpayer after February 28, 1923, and prior to January 1, 1925, and in the case of mines discovered by the taxpayer after February 28, 1913, the basis for depletion shall be the fair market value of the property at the date of discovery or within 30 days thereafter, if such wells and mines were not acquired as the result of purchase of a proven tract or lease, and if the fair market value of the property is materially disproportionate to the cost;

(2) In the case of oil and gas wells discovered by the taxpayer on or after January 1, 1925, in an area not proven at the date of such discovery, where the fair market value of the property is materially disproportionate to the cost, the basis for depletion shall be the fair market value at the date of discovery or within 30 days thereafter of the property proven by such discovery and included within the taxpayer's tracts or leases. In the case of oil or gas wells, each well producing oil or gas in commercial quantities shall be considered as having proven at least that portion of the productive sand, zone, or reservoir which is included in a square surface area of 160 acres having as its center the mouth of such well. In the case of the discovery of an oil or gas well by a person under an agreement whereby the cost of the well shall be shared with one or more other persons or whereby the cost of the well shall, if oil and gas in commercial quantities is not found, be shared with such other person or persons, then such well shall not be considered as having proven any part of a tract or lease held by such other person or persons.

"(d) The depletion allowance based on discovery value provided in paragraph (1) or (2) of subdivision (c) shall not exceed 50 per centum of the net income of the taxpayer (computed without allowance for depletion) from the property upon which the discovery was made, except that in no case shall the depletion allowance be less than it would be if computed without reference to discovery value."

Depletion allowance based upon discovery or hazard in those industries which exhaust mineral assets through operation of the business was first introduced in the Revenue Act of 1918, which was enacted on February 24, 1919. The policy of Congress to recognize the peculiar and extraordinary risks and hazards of these finding industries was reasserted in the Revenue Act of 1921 and in the Revenue Act of 1924.

Our request for consideration of this brief is based upon two principal grounds: First, although the existing depletion provision has been from time to time attacked and criticized by persons not thoroughly familiar with the oil producing business, the oil producing taxpayers have not had an opportunity to be heard on the subject before any of the committees of Congress since 1918. Second, the proposed change in the law is so restrictive as to practically destroy the relief it was intended to accord.

Criticisms Based Upon Misconceptions

It is respectfully submitted that published criticisms of the depletion provision occurring in recent committee hearings on the revenue bill and before the Select Committee on Investigation of the Bureau of Internal Revenue have arisen mainly from, (a) misconception of the fundamental purpose and office of the depletion allowance; (b) failure to fully appraise the effect of the 1924 limitation as a corrective of any extravagant depletion claims that may have been filed or allowed during the first three years of the operation of the original 1918 provision, and (c), what we believe to be a mistaken idea, that such a provision is attended with ineradicable difficulties of administration.

Fundamental Purpose of Depletion

A clear understanding of the question involved cannot be had unless the erroneous conception of its fundamental purpose is discarded. It has been stated by its critics that it was adopted as a war measure to reward the little prospector and wildcatter for discovering new pools of oil needed in 1918 for war purposes. While this reason may have been advanced among others during the early consideration of the 1918 Revenue Act, before the Armistice, the controlling reason was recognition of the exceptional hazards attending all of the activities involved in the finding and production of oil. This broad economic basis is inherent in oil production and equally important whether in peace or in war. It has been entirely lost sight of through the constant reiteration, by critics, of the war time phase of the matter.

The so-called discovery depletion section was adopted by the Senate Finance Committee after the signing of the Armistice and enacted into the law by Congress February 24, 1919, several months after hostilities had ceased and everybody knew that the war was over. Furthermore, the provision was reenacted in the Revenue Act of 1921 and continued with a limitation in the Act of 1924. So, however much the friends of the provision may have urged it in 1918, as appropriate war legislation, it is obvious that Congress did not consider that argument as of controlling or exclusive importance.

In addition to the fact that the provision was not adopted until after the war was over, there is further evidence that it had no relation to the war supply of oil. Its benefits were extended to gas wells and to all kinds of mines.

Not Limited to New Pools

The contention was also advanced at the hearing mentioned that only the discoverers of new "pools," "sands" or "zones" were intended to receive the benefit of discovery depletion. But this contention is likewise ill-founded. The Finance Committee of the United States Senate originated the provision and advisedly inserted the language, that, "oil and gas wells discovered by the taxpayer and not acquired as the result of purchase of a proven tract or lease," should be accorded discovery depletion. The discovery of a "well" not of a "pool" was designated as the criterion. If a well were discovered on a tract or lease not proven when purchased the discovery depletion right attached. Such is the construction of the law set forth for seven years, and it is supported by decisions of courts of last resort construing and defining the word "discovery" as used in the mining laws of the United States and from whence the word "discovery," as used in the depletion provision, was derived.

The significance of the word "purchase" in the above quoted language is that if at the time a tract or lease is purchased it is proven for oil or gas the price paid for it will be such that depletion deductions based upon the cost will yield the necessary replacement fund with which to find and develop a like amount of oil in the ground. Wells not acquired as the result of purchase of a proven tract or lease were given a valuation to form the basis of a like replacement fund.

Example of Misinformation

Quoting Mr. L. C. Manson, counsel for the Couzens Committee, as his remarks appear at page 1918 (part 2) of the hearings before the said Select Committee, we find an example of this misinformation which has led to confusion on this subject by introducing an erroneous idea of ease and facility in finding oil. He says:

"There are two factors in the determination whether there is oil. In the first place, you have certain geological conditions to deal with, which are generally recognized by everyone in the oil business. In the second place, to prove that oil is there, you have to find it; but when you get a combination of an actual commercial well and certain geoligical conditions—now, I am not enough of a geologist to describe what those conditions are—but I do know that when you get a combination of a well and certain geological conditions, you can define with a reasonable degree of certainty the extent of that oil body."

This statement does not conform to the experience of men who actually produce oil. The finding of a geologic structure is one thing. Locating by means of the drill a spot thereon that will produce oil is another thing. But one of the most difficult and expensive operations and one which, in the case of most structures, involves the drilling of many dry holes is that of finding and following the sinuous and irregular trend of the pay streak within the structure.

There never was and is not now any known method by which Congress can determine and state in advance how much territory a given well will prove. As a matter of fact, it proves nothing but its own location. For Congress to say that

(Continued on Page 174)

ELECT S. B. HUNT JERSEY TREASURER; G. W. MAYER RESIGNS AS DIRECTOR

S. B. Hunt has been chosen treasurer of the Standard Oil Co. of New Jersey for the second time. In connection with

Seth B. Hunt

the appointment, The Lamp, the company's official organ, says:

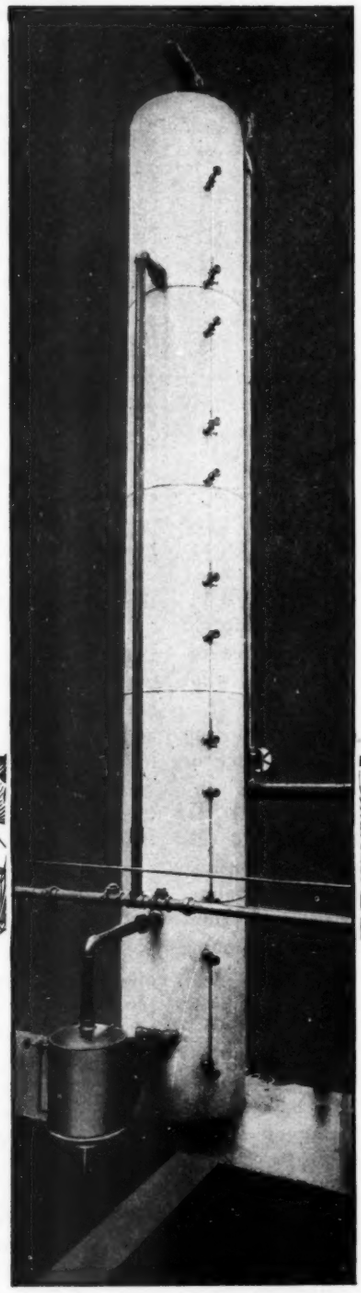
"When George H. Jones, who had been treasurer of the Standard Oil Co. (New Jersey) as well as vice president, was made chairman of the board at a meeting on November 16, 1925, it became necessary for the board to elect his successor as treasurer. Vice President S. B. Hunt had occupied this important position before Mr. Jones, from January 10, 1917, to August 21, 1919, and he was unanimously chosen treasurer again, effective as of the day of the meeting."

The resignation of George W. Mayer, director in charge of domestic marketing operations, effective December 31, 1925, also was announced. Mr. Mayer has served the company for four years, having been drafted from a similar position with the Imperial Oil Co., Ltd., a Standard Oil subsidiary. Mr. Mayer, who

George W. Mayer

came from Toronto, was elected director of the New Jersey company on January 6, 1922.

What others wish, you can do with Newton Process, in 1926



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May Your Cares Evaporate in 1926!

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FULLERTON, CALIFORNIA

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A NEW YEAR POLICY

The American people have heard a lot about "the oil monopoly"; so much that it has become a tradition handed down from generation to generation without any particular effort to inquire what truth, if any, was back of it.

Out of this notion has sprung the idea that the men who run the oil business are a "bunch of robbers" and that the price of gasoline is limited only by what the traffic will bear.

Well, if they think so let us invite their attention, as N. O. Fanning has done in an article in this issue of The Oil and Gas Journal, to what a real monopoly can do and has done and contrast the experience of its consumers with that of the buyers of gasoline.

The comparison is the more apt and convincing because the buying public in each case is the same—the American owners of motor cars. Their purchases of tires represent about the same dominant proportion of the market for rubber that their purchases of gasoline do in the market for oil.

The parallel is exact—except in terms of monopoly and its consequences. If oil production was as closely controlled as the raw rubber production is today perhaps we might have a real oil monopoly and gasoline prices that would make the buyers squirm as much as the present price of tires.

All the world knows what has happened in rubber; how the British controlling the rubber plantations of the world decided to curtail the output in order to force higher prices.

There you have a picture of monopoly in full flower, probably the first genuine demonstration of monopoly in an article of almost universal consumption that modern times have seen.

It may be that the rubber planters and their abetters, the British Government, feel that rubber is worth more than has been paid for it and that the higher prices represent nearer real value. But if it is not, exorbitant profits will, in a few years, attract others into rubber planting and the law of supply and demand will work it out.

The point for oil men is that there is a sample of what a real monopoly means and they should drive home the illustration to a public which has been thinking that it was in the grasp of an oil monopoly.

If there had been a monopoly in oil, how has it come that instead of curtailing production and forcing up prices by shortage as the raw rubber men have done, the oil industry has kept itself in a depression for the better part of three years by a reckless overproduction of both oil and gasoline in the face of the largest stocks on record?

This public which has been talking about an oil monopoly has been free to admit that the oil business is run by "mighty shrewd fellows." In fact, next to vehemence in denunciation, the public's other feeling about oil men has been an envious admiration.

It is one of our most distinctive American traits to damn a man we think a rogue and at the same moment chuckle over his cunning. That attitude, in effect, of condoning wrong because it is clever, is responsible for a lot of the evils we complain about.

But the oil industry will have to deny both the impeachment and the compliment. If it had been a monopoly it was not smart enough to squeeze the public to the last penny as the raw rubber men have done. Instead of working towards a monopoly, it produced so much oil and gasoline that it forced down the price below the cost of production not in one year alone but in three.

The case of raw rubber shows that no monopoly would act like that.

It is not necessary to assert that oil men would be less ready to exact profits if they had the opportunity offered the rubber planters. The stern fact is that they have never had such an opportunity and there is not the slightest chance they ever will so long as the supply and price of oil may be at the mercy of any wildcatter who can get a string of tools together and a place to drill.

This is not rhetoric but too frequently proved in recent years by actual events.

Take the situation in the oil industry at this very moment, on the eve of another year.

As a whole the latter part of 1925 has redeemed in some measure the hopes entertained a year ago. It would have been a much better year if the conservative counsel followed in recent months had been heeded early in 1925. But the fact that it was finally listened to and acted upon is responsible for whatever share of prosperity the industry attained in 1925.

That fact should not be forgotten as we enter 1926. If we continue a cautious policy we may make the coming year even better than the best part of the year that is expiring.

But we must begin now and not wait, like last year, until a lot of damage has been done.

The better situation developed in the recent months through moderation should be conclusive proof that the prosperity of the oil industry, in normal business conditions throughout the country, lies in the hands of the industry itself.

It can make or break its own market by its own course.

Prices are not everything, no more than volume of sales. A price that assures a normal operating profit may in the long run be infinitely better than a temporary period of exceptional prices which cause overproduction and glut the market so that they are inevitably followed by prices that do not represent either cost or value.

East of the Rockies we must not forget California's surplus and the national accumulation of stocks. Production is still high and deeper drilling is disclosing resources that no man can estimate safely.

Higher prices east of the mountains would prolong the period of California shipments just so much.

The industry has been nearer prosperity in the past few months than it has for more than three years. By wise management those conditions can be greatly improved in the coming year so that we may have the best year in the history of the industry.

Everything points to it, general business conditions throughout the country and the world, and conditions within the industry itself if properly handled.

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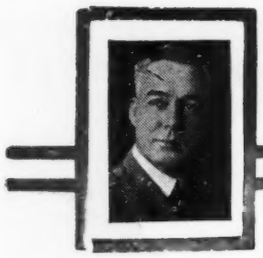


North-Central Texas Field

By George R. Kelley

Landreth Petroleum Co.'s No. 3 Gratz, Stephens County, makes 1,275 bbls. Deep Rock Co.'s wildcat in Howard County gets showings. Midwest Exploration has good prospect in Wheeler County. Good producers in Wilbarger County. McCamey, Sherrin and others' well swabs 600 bbls.

FORT WORTH, Tex., Dec. 28.—One of the best wells to be completed anywhere in the North Texas territory for several weeks is the Landreth Production Co.'s No. 3 Gratz in Stephens County. While the well is not yet listed as a completion it is gradually increasing in output. Production was obtained from the sand at 3,156 feet and it has been drilled into the sand 9 feet. The well started off with a production around 1,000 bbls. but at latest reports is making 1,275 bbls. daily.

Some little interest was manifested in the showing made by the Deep Rock Oil Co.'s wildcat, No. 1 Scott, in Howard County. The showing of oil was encountered at 2,700 feet and there was a total of 25 feet of sand. The producing formation is characterized as lime. The well produced about a half bailer of oil every two hours while being tested. The formation has been passed up, however, and the well is now drilling at a total depth of 2,745 feet. This is the second interesting showing of oil encountered by this operation, the other being found at 1,300 feet in a sand. It was estimated this 1,300-foot sand would have made a well of about 25 bbls.

The Humphreys Oil Corp.'s No. 1 University in Crockett County has been drilled to a total depth of 1,960 feet and is reported standing about 300 feet in sulphur water. The well is being plugged back to the 1,840-foot level where it is to be shot in an effort to make a producer, a fairly good showing of oil having been passed up at this depth.

The Midwest Exploration Co. has a prospect for a very good well in Wheeler County, Texas Panhandle. It is No. 1 Williams & Laycock, which encountered the producing formation at 2,224 feet and has been drilled to 2,238 feet. On the first test the well made 100 bbls. in 12 hours.

Good Producers

There are several good new producers in Wilbarger and Archer Counties which have not been completed, both counties being given the promise of probably increased production next week. The Landreth Production Co. has two new producers on the Waggoner lands in Wilbarger County. No. 6-F Waggoner is in sand at 1,882 to 1,902 feet and is swabbing at the rate of 200 bbls. The same company's No. 1-H Waggoner is in sand at 1,856 to 1,870 feet and is flowing at the rate of 300 bbls. daily.

McCamey, Sherrin and others also have a good new producer in this field. It is No. 24 Stephens which is producing from the 2,000-foot sand. The well is swabbing 600 bbls. daily from sand at 2,070 to 2,080 feet.

Nearly a dozen new producers in the various pools of Archer County give promise of some increase in daily output of that county in the next few days. The American Refining Co.'s No. 3 Portwood is estimated to be good for 200 bbls. in sand at 1,553 to 1,557 feet and the Magnolia Petroleum Co. has two new producers on the Portwood. The Magnolia's No. 4 Portwood is estimated good for 75 bbls. in sand at 1,397 feet and the same company's No. 5 Portwood is swabbing at the rate of 125 bbls. daily from 1,391 to 1,410 feet.

The Atlantic Oil Producing Co. has a small well in its No. 1 Falls County School Land. The well has six feet of sand topped at 1,165 feet and it is estimated to be making 25 bbls daily. The Independent Oil & Gas Co.'s No. 1 Wolf, which was reported two weeks ago to be showing for a small producer, is now making 60 bbls. daily through the tubing at 1,313 to 1,317 feet. The well is to be put on the pump at once.

The Pandem Oil Corp. has a 150-bbl. well in its No. 4 Cockrell. The well is only 2 feet in the sand which was topped at 1,435 feet. The same company's No. 3 Young is also a new producer. It is estimated to be making 75 bbls. from sand at 1,437 to 1,442 feet. The Sun Oil Co.'s No. 6 Richardson near the town of Megargel in Archer County is estimated to be making 100 bbls. from the sand at 1,451 to 1,454 feet.

North Young Producer

In the North Young County district Texhoma Oil & Refining Co.'s No. 16 Campbell is showing for a very good producer. Sand was encountered at 876 feet and it has been drilled to a total depth of 916 feet. The well is estimated to be good for 300 bbls. daily.

The Texas Co. is moving in material for a test to be drilled in western Callahan County, in what is known as the Hereford Lake district. The location is on the Legett farm in Section 18, Block 8, Southern Pacific Railway Co. survey of Callahan County. The well is to be drilled to a depth of 2,300 feet unless commercial production is encountered. The well is being drilled on a block of acreage originally taken up by Homer Peeples of Fort Worth and then taken over by The Texas Co.

Four or five miles southwest of this location and over the line in eastern Taylor County the Sanger Oil & Refining Co. is reported to have encountered a sand at 1,860 feet which is showing gas, estimated to be around 500,000 feet. The Texas Co. made its location with the hope of getting a sand around 1,800 feet.

Week's Completions

This week's completions in the district totaled 99 against 89 for the week before. Of this week's completions 51 were oil producers, 46 were failures and 2 were gas wells. The 51 new oil wells had a new production of 4,045 bbls., against a total new production last week of 5,335 bbls. from 54 new producers.

The following table gives the completions by districts together with the totals for this week and the week previous:

District—	Comp.	Prod.	Dry	Gas	New Prod.
Wichita	33	19	14	0	635
Wilbarger	9	7	1	1	*650
Archer	24	11	13	0	1,075
Young	8	4	4	0	560
Stephens	2	0	2	0	...
Eastland	1	0	1	0	...
Brown	3	2	1	0	60
Reagan	1	1	0	0	600
Callahan	6	3	3	0	125
Shackelford	5	2	3	0	40
Wildcats	7	2	4	1	*80
Total	99	51	46	2	4,045
Tot. last wk.	89	54	31	4	5,335
Difference	10	3	15	2	1,290

*There was one gas well in Wilbarger County making 3,000,000 feet of gas daily and one in the wildcat districts making 1,250,000 feet daily.

PRODUCTION REPORT
Week Ending December 24, 1925
Burkburnett

Gulf Production Co.	480
Humble Oil & Ref. Co.	370
Magnolia Petroleum Co.	2,840
Panhandle Ref. Co.	250
Prairie Oil & Gas Co.	30
Sinclair Oil & Gas Co.	55
Sun Oil Co.	70
The Texas Co.	430
Texhoma Oil & Ref. Co.	515
Miscellaneous	8,015
Total	13,055

Electra

Empire Gas & Fuel Co.	960
Gulf Production Co.	980
Humble Oil & Ref. Co	120
Magnolia Petroleum Co.	3,660
Panhandle Ref. Co.	55
Prairie Oil & Gas Co.	130
The Texas Co.	3,470
Texhoma Oil & Ref. Co.	1,655
Miscellaneous	6,210
Total	17,240

Iowa Park

Gulf Production Co.	40
Humble Oil & Ref. Co.	220
Magnolia Petroleum Co.	575
Panhandle Ref. Co.	40
The Texas Co.	415
Texhoma Oil & Ref. Co.	40
Miscellaneous	4,130
Total	5,460

Wilbarger

Gulf Production Co.	35
Humble Oil & Ref. Co.	4,530
Prairie Oil & Gas Co.	55
Miscellaneous	11,590
Total	16,210

Archer County

Empire Gas & Fuel Co.	1,020
Gulf Production Co.	2,335
Humble Oil & Ref. Co.	430
Magnolia Petroleum Co.	1,635
Panhandle Ref. Co.	150
Prairie Oil & Gas Co.	3,060
Sun Oil Co.	335
The Texas Co.	2,825
Texhoma Oil & Ref. Co.	2,185
Miscellaneous	18,060
Total	32,035

Stephens County

Empire Gas & Fuel Co.	35
Gulf Production Co.	1,425
Humble Oil & Ref. Co.	420
Magnolia Petroleum Co.	680
Mid-Kansas Oil & Gas Co.	1,510
Prairie Oil & Gas Co.	850
Sinclair Oil & Gas Co.	70
Sun Oil Co.	180
The Texas Co.	1,280
Texas Pacific Coal & Oil Co.	1,190
Miscellaneous	6,855
Total	14,495

Ranger

Gulf Production Co.	255
Humble Oil & Ref. Co.	35
Magnolia Petroleum Co.	625
Mid-Kansas Oil & Gas Co.	165
Panhandle Refining Co.	140
Prairie Oil & Gas Co.	650
Sinclair Oil & Gas Co.	335
The Texas Co.	155
Texas Pacific Coal & Oil Co.	770
Miscellaneous	2,785
Total	5,915

Moran

Empire Gas & Fuel Co.	25
Humble Oil & Ref. Co.	10
Prairie Oil & Gas Co.	15
The Texas Co.	350
Texhoma Oil & Ref. Co.	90
Miscellaneous	1,935
Total	2,425

Young County

Gulf Production Co.	215
Humble Oil & Ref. Co.	500
Magnolia Petroleum Co.	280
Mid-Kansas Oil & Gas Co.	15
Panhandle Ref. Co.	175
Prairie Oil & Gas Co.	10
Sinclair Oil & Gas Co.	360
Sun Oil Co.	60
The Texas Co.	620
Texhoma Oil & Ref. Co.	820
Miscellaneous	6,365
Total	9,420

Eastland-Comanche

Empire Gas & Fuel Co.	10
Humble Oil & Ref. Co.	145
Magnolia Petroleum Co.	750
Mid-Kansas Oil & Gas Co.	175
Prairie Oil & Gas Co.	125
Sinclair Oil & Gas Co.	25
The Texas Co.	140
Texas Pacific Coal & Oil Co.	95
Miscellaneous	1,595
Total	3,060

Panhandle

Carson County	2,200
Hutchinson County	2,410
Wheeler County	115
Gray County	155
Total	4,880

Miscellaneous Pools

Clay	420
Montague	865
Jack	25
Throckmorton	190
Baylor	325
Palo Pinto	515
Brown	2,245
Coleman	270
Callahan	5,650
Mitchell	3,250
Reagan County	32,085
Scurry	55
Crockett	45
Total	45,945
Total this week	170,140
Total last week	168,775
Gain	1,365

Wichita County Completions

Bridwell and others' No. 1 Miller, dry at 2,277 feet; Shappell Oil Co.'s No. 33 Jackson, 60 bbls. at 1,805 feet; Simms Oil Co.'s No. 3 Dutlon, 10 bbls. at 1,830 feet; White and others' No. 1 McClure, dry at 2,258 feet; Apple and others' No. 16-A Jennings, 75 bbls. at 1,701 feet; Biggs Oil Co.'s No. 12 Fisher, 5 bbls. at 838 feet; Brader and others' No. 2 Jennings, 15 bbls. at 1,837 feet; Bullington and others' No. 11 Jennings, 155 bbls. at 1,622 feet; Culberson Co.'s No. 28 Waggoner, dry at 1,957 feet; Culberson No. 29 Waggoner, dry at 1,540 feet; No. 30 Waggoner, 25 bbls. at 1,518 feet; No. 31 Waggoner, 20 bbls. at 1,540 feet; Dale Oil Co.'s No. 6 Burnett, 20 bbls. at 814 feet; No. 7 Burnett, dry at 830 feet; No. 8 Burnett, 15 bbls. at 814 feet; Electra Gulf Oil Co.'s No. 7 Murray, 55 bbls. at 1,764 feet; Hunter and others' No. 4 Waggoner Brothers, dry at 2,051 feet; No. 5 Waggoner Brothers, 20 bbls. at 1,508 feet; No. 6 Waggoner Brothers, 20 bbls. at 1,513 feet; No. 7 Waggoner Brothers, dry at 1,830 feet; Jones and others' No. 3 Jennings, 15 bbls. at 1,812 feet; K. M. A. Oil Co.'s No. 23 Munger, 5 bbls. at 1,750 feet; O'Neil and others' No. 14 Rio Bravo, 40 bbls. at 1,539 feet; No. 15 Rio Bravo, dry at 1,615 feet; No. 16 Rio Bravo, 40 bbls. at 1,554 feet; No. 17, dry at 1,924 feet; No. 18 Rio Bravo, 35 bbls. at 1,371 feet; No. 19 Rio Bravo, dry at 1,626 feet; No. 20, dry at 1,605 feet; No. 21 Rio Bravo, dry at 1,557 feet; Perkins and others' No. 1 Munger, dry at 1,850 feet; Staley and others' No. 1 Marshall, dry at 2,150 feet; Texhoma Oil & Refining Co.'s No. 6-E Burnett, 25 bbls. at 1,632 feet.

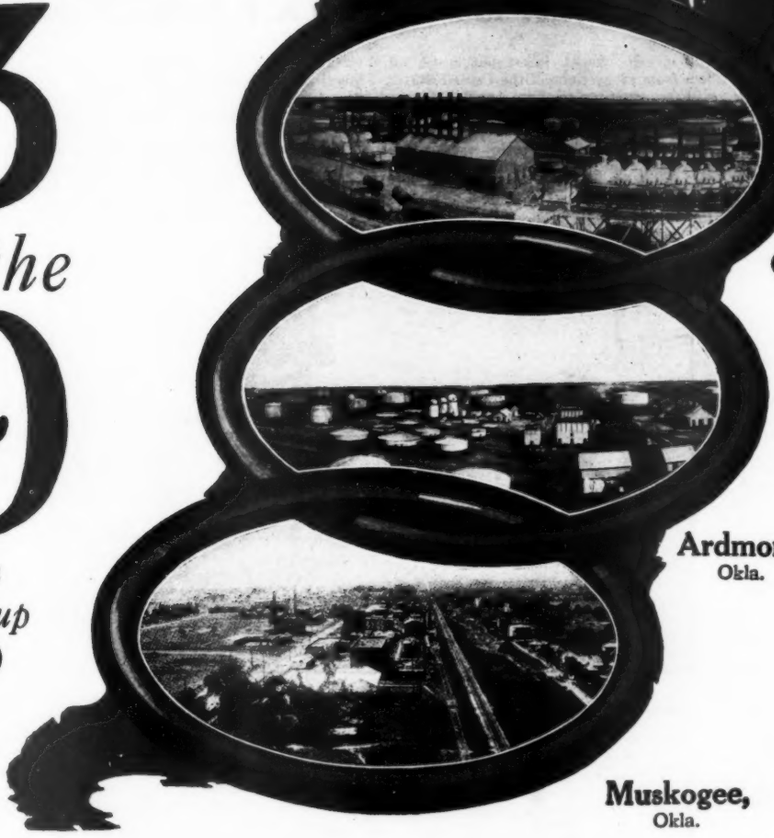
Wilbarger County

Humble Oil & Refining Co.'s No. 33-A Stephens, 60 bbls. at 2,400 feet; Landreth Production Co.'s No. 1-F Waggoner, 300 bbls. at 1,900 feet; McCamey and others' No. 25 Stephens, 300 bbls. at 2,361 feet; No. 26 Stephens, 60 bbls. at 2,035 feet; Milham Corp.'s No. 1-H Waggoner, 15 bbls. at 2,402 feet; Petroleum Production Co.'s No. 20-B Dill, 100 bbls. at 2,400 feet; Prairie Oil & Gas Co.'s No. 1-B Waggoner, 15 bbls. at 2,343 feet; Smith and others' No. 1 Castlebury, 3,000,000 feet of gas at 1,370 feet; Tidal Oil Co.'s No. 1 Waggoner (Section 36), dry at 2,375 feet.

Archer County

Bailey and others' No. 1 Gose, dry at 1,660 feet; Boller and others' No. 9 Wilmot, 10 bbls. at 1,400 feet; Burns and others' No. 1 Brown, 40 bbls. at 1,595 feet; Day and others' No. 4 White, dry at 1,470 feet; Phillips Petroleum Co.'s No. 88 White, 35 bbls. at 1,623 feet; Harris and others' No. 1 Mahler, dry at 1,810 feet; Maer and others' No. 1 Hutcherson, 80 bbls. at 1,390 feet; Mahlstedt Mook Oil Co.'s No. 2 Hutcherson, dry at 1,625 feet; Riner and others' No. 1-D Wilson, dry at 1,651 feet; Underwood Drilling Co.'s No. 1 Culberson, dry at 1,703 feet; Wichtex Oil Co.'s No. 3 Jackson, 95 bbls. at 1,557 feet; Bridwell and others' No. 1 Thurberville, dry at 1,502 feet; Jones and others' No. 3 Darilek, 210 bbls. at 1,407 feet; Mahlstedt Oil Co.'s No. 1 Louster, 25 bbls. at 1,185 feet; M. & V. Oil Co.'s No. 1 Louster, 140 bbls. at 1,180 feet; Pandem Oil Corp.'s No. 1 Crawford, dry at 1,502 feet; Terminal Oil Co.'s No. 3 Falls County, dry at 1,201 feet; Perkins and others' No. 8 Anderson, 130 bbls. at 1,424 feet; E. L. Smith Oil Co.'s No. 1 Roller, dry at 1,556 feet; The Texas Co.'s No. 16 Hill, 50 bbls. at 1,395 feet; No. 1 Wilborn, dry at 1,510 feet; Trio Production Co.'s No. 7 Brown, 250 bbls. at 1,418

3 of the 9 (In Group 3)



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feet; Winnipeg O.l Co.'s No. 1 Portwood, dry at 1,463 feet.

Young County

Bridwell and others' No. 7 Boren, 125 bbls. at 1,979 feet; Dyer and others' No. 1 Eppstein, dry at 2,640 feet; Plains Production Co.'s No. 1 Casey, dry at 1,040 feet; Richards and others' No. 3 Campbell, dry at 926 feet; Seigler and others' No. 1 White, dry at 1,107 feet; Texhoma Oil & Refining Co.'s No. 1-A Campbell, 35 bbls. at 921 feet; Tidal Oil Co.'s No. 9 Campbell, 280 bbls. at 926 feet; No. 12 Campbell, 120 bbls. at 935 feet.

Stephens County

States Oil Corp.'s No. 2 Cooper, dry at 3,724 feet; No. 1 Dean, dry at 3,890 feet.

Eastland County

Mahlstedt Oil Co.'s No. 1 Webb, dry at 1,400 feet.

Brown County

Cosden and others' No. 1 Gaines, 20 bbls. at 1,270 feet; Schaffner and others' No. 5 Prather, dry at 1,325 feet; Simms Oil Co.'s No. 4 Gains, 40 bbls. at 1,274 feet.

Reagan County

Texon Oil & Land Co.'s No. 35 Group 1 University, 600 bbls. at 3,016 feet.

Callahan County

Brannon and others' No. 1 Block 4, 25 bbls. at 1,458 feet; No. 1 Block 14, 40 bbls. at 1,471 feet; Cranfill and others' No. 1 Barr, dry at 1,625 feet; Hornbeak and others' No. 1 Brigner, 60 bbls. at 1,458 feet.. Mitchell and others' No. 1, Block 20, dry at 1,475 feet; Mogul Oil Corp.'s No. 1 McDermott, dry at 972 feet.

Baylor County

Petroleum Production Co.'s No. 5 Mills, 40 bbls. at 1,413 feet.

Clay County

Craig and others' No. 1 Culbertson, dry at 1,903 feet.

Montague County

Humphreys Oil Corp.'s No. 2 Hinds, 40 bbls. at 954 feet.

Throckmorton County

Domestic Oil Co.'s No. 1 Howsley, dry at 2,050 feet; Southern Exploration Co.'s No. 1 Stevens, dry at 2,168 feet.

Shackelford County

Albany Oil Co.'s No. 5 Moberly, 10 bbls. at 994 feet; Gillespie and others' No. 1 Davis, dry at 1,568 feet; Hayes and others' No. 1 Matthews, 30 bbls. at 1,148 feet; Milham Oil Corp.'s No. 1-A Clausell, dry at 540 feet; No. 4-A Clausell, dry at 545 feet.

Palto Pinto County

Upham Cas Co.'s No. 5 Edmondson, 1,250,000 feet of gas at 1,165 feet.

Val Verde County

Rio Bravo Oil Co.'s No. 1 Moore, dry at 1,220 feet.

Wichita County Drilling

Panhandle Refining Co.'s No. 4 Jackson, drilling at 1,700 feet; Burt and others' No. 1 Hansard, 1,875 feet; Dyson and others' No. 1 Holder, setting casing at 595 feet; Fisher and others' No. 9 Birk, drilling at 1,200 feet; Laning and others' No. 1 Riley, 1,313 feet; Robinson and others' No. 21 Roller, 150 feet; Apple and others' No. 1 Fisher, 750 feet; Biggs Oil Co.'s No. 13 Fisher, 910 feet; Dale Oil Corp.'s No. 19 Jennings, 1,510 feet; No. 20 Jennings, 1,200 feet; Duffy and others' No. 1 Schroeder, 200 feet; Empire Oil & Gas Co.'s No. 16 Pierce, 1,471 feet; Hommond and others' No. 1-B Burnett, 1,000 feet; Hunter and others' No. 8 Waggoner Brothers, 700 feet; K-M-A Oil Co.'s No. 24 Munger, 800 feet; McCarty Oil Co.'s No. 1 Jennings, 920 feet; Madison Oil & Gas Co.'s No. 13 Burnett, 1,465 feet; Perkins and others' No. 3 Beaver Electra, 1,400 feet; Pois and others' No. 11 Waggoner, 1,000 feet; Shappell Oil Co.'s No. 5-B McCarty, 900 feet; Texhoma Oil & Refining Co.'s No. 4-M Burnett, 495 feet; No. 1 Ferguson, 1,795 feet.

Wilbarger County

Barkley and others' No. 8-A Stephens, cementing at 2,311 feet; No. 9-A Stephens, cementing at 2,319 feet; No. 2-B Stephens, drilling at 1,500 feet; No. 3-B Stephens, 1,720 feet; No. 4-B Stephens, 1,110 feet; Bridwell and others' No. 8 Stephens, fishing at 2,423 feet; Garretson and others' No. 1 Waggoner, drilling at 1,000 feet; Gose and others' No. 1 Woodard, 900 feet; Humble Oil & Refining Co.'s No. 23 Castlebury, 1,112 feet; No. 31 Stephens, cleaning out at 2,353 feet; No. 39 Stephens, cementing at 2,249 feet; No. 40 Stephens, drilling at 1,506 feet; No. 41 S ephens, 885 feet; No. 4-G Waggoner, 1,504 feet; No. 5-H Waggoner, 1,479 feet; No. 5-H Waggoner, 150 feet; No. 6-H Waggoner, 915 feet; No. 1-I Waggoner, showing oil at 1,894 feet; No. 2-I Waggoner, cementing at 1,872 feet; No. 3-I Waggoner, drilling at 1,037 feet; No. 4-I Waggoner, 800 feet; No. 1-K Waggoner, 2,016 feet; No. 1-L Waggoner, 1,082 feet; No. 1-M Waggoner, 1,103 feet; Independent Oil & Gas Co.'s No. 1 Waggoner, 1,100 feet; Kolp and others' No. 10-A Waggoner, 1,320 feet; Landreth Production Co.'s No. 3-A Waggoner, 1,610 feet; No. 5-A Waggoner, 930 feet; No. 1-BB Waggoner, 1,200 feet; No. 1-CC, 1,590 feet; No. 4-D Waggoner, fishing at 2,135 feet; No. 7-D Waggoner, at 1,800 feet; No. 9-D Waggoner, 1,110 feet; No. 10-D Waggoner, 970 feet; No. 1-EE Waggoner, 1,400 feet; No. 4-F Waggoner, 1,110 feet; No. 7-F Waggoner, 1,000 feet; No. 3-H Waggoner, 600 feet; No. 2-I Waggoner, 1,000 feet; No. 1-OO Waggoner, 700 feet; No. 1-P Waggoner, 2,100 feet; No. 1-PP Waggoner, 1,100 feet; No. 1-Q Waggoner, 600 feet; No. 1-QQ Waggoner, fishing at 1,275 feet; Lawson and others' No. 14 Waggoner, drilling at 1,930 feet; Jim McCamey and others' No. 1 Waggoner, 1,800 feet; No. 8 Stephens, underreaming; No. 8 Stephens, cleaning out at 2,080 feet; No. 28 Stephens, drilling at 2,000 feet; No. 29 Stephens, 1,300 feet; Magnolia Petroleum Co.'s No. 70 fee, underreaming; No. 1 Jiggs-Waggoner, underreaming; Milham Oil Corp.'s No. 2-A Waggoner, drilling at 1,335 feet; No. 1-C Waggoner, 1,290 feet; No. 1-D Waggoner, 400 feet; Petroleum Production Co.'s No. 7 Dill, 300 feet; Ray and others' No. 8 Band, 900 feet; Roeser and others' No. 1-B Waggoner, 1,850 feet; Roxana Petroleum Corp.'s No. 2-A Waggoner, underreaming; No. 3-A Waggoner, drilling at 1,200 feet; No. 4-A Waggoner, 950 feet; No. 5-A Waggoner, 600 feet; No. 1-C Waggoner, 1,635 feet; Shamrock Oil Co.'s No. 1 Waggoner, 1,413 feet; Sloan and others' No. 1 Waggoner, 2,200 feet; Staley and others' No. 10 Stephens, 2,250 feet; No. 11 Stephens, cleaning out at 2,291 feet; No. 12 Stephens, drilling at 1,000 feet; No. 13 Stephens, 400 feet; State Oil Corp.'s No. 1 Waggoner, underreaming; Texas Oil Corp.'s No. 1 Waggoner, underreaming; The Texas Co.'s No. 1 Dill, drilling at 1,100 feet; No. 1 Zipperle, 1,000 feet; Winnipeg Oil Co.'s No. 1 Waggoner, 1,710 feet; Wood and others' No. 1 Dennis, 2,200 feet.

Young County

Beavers and others' No. 1 Teague, drilling at 75 feet; Bridwell and others' No. 8 Boren, 470 feet; Consolidated Oil Co.'s No. 1 Gibbs, 921 feet; Harris and others' No. 1 Sims, 420 feet; Hoyle and others' No. 1 Benson, sand at 906 feet; Hubbord Drilling Co.'s No. 1 Harrison, drilling at 1,220 feet; Nash and others' No. 4-A Williams, 1,770 feet; Newby and others' No. 1 Lunn, 1,130 feet; No. 1 Speer, 666 feet; Plains Production Co.'s No. 1 Lindsay, 430 feet; Simms Oil Co.'s No. 1 Goldston, 2,970 feet; Stovall and others' No. 4 fee, 2,810 feet; Suggett and others' No. 1 Perkins, 780 feet; The Texas Co.'s No. 1 Barry, 1,022 feet; No. 4 Boren, 260 feet; Texas Unity Oil Co.'s No. 1 Watson, 320 feet; Texhoma Oil & Refining Co.'s No. 17 Campbell, 916 feet; Tidal Oil Co.'s No. 11 Campbell, 860 feet; No. 13 Campbell, 1,101 feet; Whitehead and others' No. 2-B Belknap Coal, 2,320 feet; Wolf and others' No. 1 Leberman, 720 feet.

Stephens County

Gardner and others' No. 2 Cunningham, drilling at 2,200 feet; Mid-Kansas Oil Co.'s No. 8 Hill, 1,545 feet; Mid-Kansas Oil Co.'s No. 9 Hill, spudding; Mid-Tex Oil Co.'s No. 3 Cunningham, drilling at 1,650 feet; No. 1 Morrison, 2,200 feet; Prairie Oil & Gas Co.'s No. 1 Donnell, 1,350 feet; Rhodes and others' No. 1 Langford, fishing at 2,720 feet; Adamson and others' No. 2 Bradford, drilling at 900 feet; Brown & Co.'s No. 4 Akin, 1,310 feet; Chastain and others' No. 1 Young, underreaming; Hughes and others' No. 5 Gandy, drilling at 720 feet; No. 1 Long, 1,590 feet; No. 1 Thompson, showing oil at 2,100 feet; Kinney and others' No. 1 McCleskey, drilling at 600 feet; Landreth Production Co.'s No. 1 Akin, drilling at 500 feet; Producers Union Oil Co.'s No. 4 Moon, 2,236 feet; Roth and others' No. 1 Suddeth, cleaning out and showing oil at 3,758 feet; States Oil Corp.'s No. 2 Hawkins, drilling at 1,360 feet; Swensonda'e Oil Co.'s No. 1-B Swenson, 1,243 feet; Texas Pacific Coal & Oil Co.'s No. 7 Adams, underreaming; No. 59 Binney, showing oil at 1,923 feet; The Texas Co.'s No. 2 Grimes, cleaning out at 3,347 feet.

(Continued on Page 173)

ONLY TWO WEEKS INTERVENES UNTIL START IS MADE TO A. P. I. MEETING

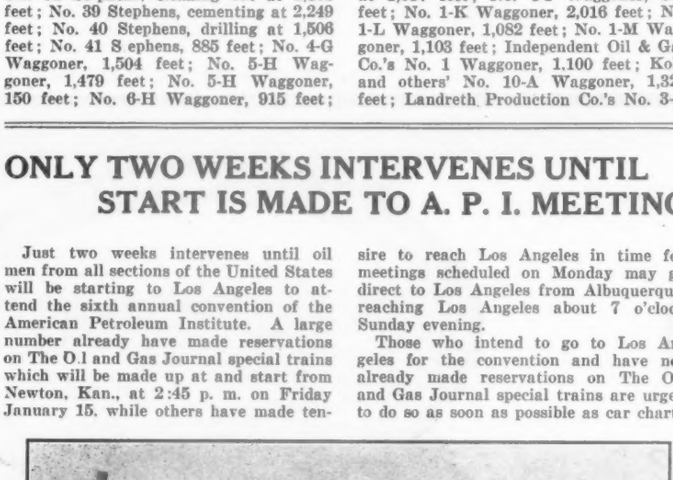
Just two weeks intervenes until oil men from all sections of the United States will be starting to Los Angeles to attend the sixth annual convention of the American Petroleum Institute. A large number already have made reservations on The O.l and Gas Journal special trains which will be made up at and start from Newton, Kan., at 2:45 p. m. on Friday January 15, while others have made tentative reservations contingent upon their getting their business in shape to make the trip.

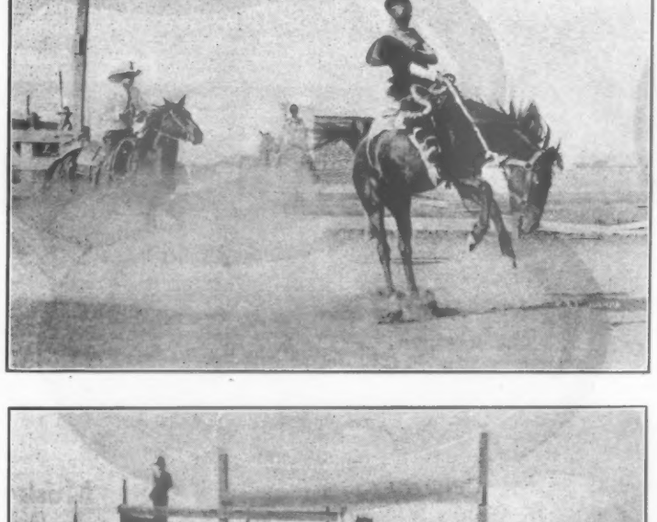
The program of entertainment for the trip has been completed and at Albuquerque, N. Mex., all are literally "rarin' to go." It is here the effete easterners will be treated to a real wild west rodeo with nationally known riders taking part and where members of the different Indian tribes of the vicinity will stage tribal and ceremonial dances of the kind only given on special occasions. A six-hour stop will be made at Albuquerque on Saturday, January 16.

For those who are not members of committees of the Institute and who need not arrive in Los Angeles before 1 p. m. Monday, an all-day stop has been arranged for Sunday at Grand Canyon National Park in Arizona, in order that they may view the world's greatest scenic wonder. Members of committees who desire to reach Los Angeles in time for meetings scheduled on Monday may go direct to Los Angeles from Albuquerque, reaching Los Angeles about 7 o'clock Sunday evening.

Those who intend to go to Los Angeles for the convention and have not already made reservations on The Oil and Gas Journal special trains are urged to do so as soon as possible as car charts are being made up. The condensed schedule for the special trains, including the stop at Grand Canyon, follows:

Lv.	New York City	2:45 p.m., Jan. 13
Ar.	Chicago	9:45 a.m., Jan. 14
Lv.	Chicago, Santa Fe	8:00 p.m., Jan. 14
Ar.	Kansas City, Santa Fe	8:15 a.m., Jan. 15
Lv.	Tulsa, Santa Fe	11:05 p.m., Jan. 14
Lv.	Bartlesville, Santa Fe	12:45 a.m., Jan. 15
Ar.	Kansas City, Santa Fe.	7:30 a.m., Jan. 15
Lv.	St. Louis	11:55 p.m., Jan. 14
Ar.	Kansas City	7:55 a.m., Jan. 15
Lv.	Kansas City, Santa Fe.	9:00 a.m., Jan. 15
Ar.	Newton, Santa Fe	2:35 p.m., Jan. 15
Lv.	Houston, Santa Fe	8:30 a.m., Jan. 14
Lv.	Ft. Worth, Santa Fe	8:35 p.m., Jan. 14
Lv.	Okla. City, Santa Fe	8:45 a.m., Jan. 15
Lv.	Ark. City, Santa Fe	12:03 noon Jan. 15
Lv.	Winfield, Santa Fe	12:23 p.m., Jan. 15
Lv.	Wichita, Santa Fe	1:23 p.m., Jan. 15
Ar.	Newton, Santa Fe	2:05 p.m., Jan. 15
Lv.	Newton, Santa Fe	2:45 p.m., Jan. 15
Ar.	La Junta, Santa Fe	10:40 p.m., Jan. 15
Lv.	Denver, Santa Fe	3:00 p.m., Jan. 15
Ar.	La Junta, Santa Fe	9:45 p.m., Jan. 15
Lv.	La Junta, Santa Fe	10:55 p.m., Jan. 15
Lv.	Las Vegas, Santa Fe	5:20 a.m., Jan. 16
Ar.	Albuquerque, Santa Fe	10:30 a.m., Jan. 16
Lv.	Albuquerque, Santa Fe	4:30 p.m., Jan. 16
Ar.	Grand Can., Santa Fe.	7:20 a.m., Jan. 17
Lv.	Grand Can., Santa Fe.	6:00 p.m., Jan. 17
Ar.	Los Angeles, Santa Fe	1:00 p.m., Jan. 18





Broncho busting and riding at Albuquerque.

Late News From the Fields

OKLAHOMA

The Magnolia Petroleum Co.'s Wilcox sand discovery in the old Wewoka Field, in the NW cor. Section 5-7-8, averaged more than 4,000 bbls. daily during the past week, making 4,065 bbls. Sunday and 3,996 bbls. Monday. Due to the seasonal suspension of activities, the drilling campaign which will result from this find has not attained much headway as yet. Ramsey deepened his No. 1 Amos, C NE SE SE, Section 31-8-8. The lime was topped at 3,975 feet and at 4,060 feet it was flowing every four hours at the rate of 120 bbls. daily.

While many structures in the Wewoka district have been tested to the Wilcox, it is believed by men who have studied the structure on which the Magnolia's well is located that the new pool will cover about 320 acres. Three dry holes in the Wilcox sand limit its extent on the north and west. These are in the NE cor. SW SE, Section 7-7-8, southwest of the well; in the CWL SE NE, Section 32-8-8, north of the well, and in the SE cor. Section 25-8-7, northwest. Small production or showings of oil have been obtained in the Hunton lime in the following locations: SW SE SW, Section 28-8-8; SE NE SW, Section 29-8-8; CWL SE NE, Section 32-8-8; SE NE SE, Section 31-8-8; SW NW SW, Section 32-8-8; NW SW SW, Section 32-8-8, and NE cor. Section 5-7-8.

A good Dutcher sand well was drilled in by the Waite Phillips Co. in west central Creek County. The company's No. 1 Cobb, SW cor. NW SW, Section 26-17-8, produced 400 bbls. from sand topped at 3,202 feet and drilled in 9 feet.

A peculiar condition in the Burbank Field is shown by the Producers & Refiners and Comar Oil Co.'s No. 2, SW cor. NW SW SW, Section 8-27-6, just a location removed from a 1,200-bbl. well. The No. 2 was drilling Monday 30 feet in the sand topped at 2,987 feet and nothing had shown up at that depth.

The Davenport Field produced a daily average of 19,100 bbls. from 95 wells for the week ended December 28, a decrease of 2,132 bbls. with no new wells. The Stroud Field during the same period produced 3,084 bbls. daily from 71 wells, an increase of 155 bbls. The Skellyville Pool, also in Lincoln County, declined 48 bbls. from the previous week, yielding 1,843 bbls. from its usual six wells.

Flynn, Morgan and associates were deepening their Earlsboro wildcat Tuesday. This well is No. 1 Ingram, NW cor. SE, Section 10-9-5, northwestern Seminole County. It swabbed 45 bbls. Monday from sand at 3,560-67 feet.

KANSAS

The Phillips Petroleum Co. extended production westward across the Cowley County line into Sumner County when its No. 1 Holt, NE cor. SE, Section 24-33-2e, was drilled 2 feet into chat and flowed 215 bbls. in the first 24 hours. Sand was topped at 3,197-3,216 feet.

Rice County came back into the reports again as a result of Hipple and others' No. 1 Welch, NW cor. SE, Section 35-20-6w, which had 2,000 feet of oil in the hole from sand at 3,362-3,400 feet. The big pipe was being pulled to drill in.

GULF COAST

HOUSTON, Tex., Dec. 29.—Rycade Petroleum Corp.'s No. 13-B in the Orange Pool is flowing 1,500 bbls. at 4,450 feet, and No. 14 is bailing at same depth.

Fire of unknown origin destroyed the derrick over the Sun Oil Co.'s No. 1 Wright, a pumping well on the east side of the Goose Creek Pool.

A survey of the gas fields in Live Oak and Refugio Counties shows a total of 18 producing wells with a combined capacity of 674,000,000 feet open flow. The Houston Oil Co. has 10 wells on the Cartwright ranch in Live Oak County with an open flow of 320,000,000 feet. The same company and other interests have eight wells in Refugio County with a combined open flow of 354,000,000 feet. A total of 13 wells have been drilled in the Live Oak Field and 25 in Refugio County.

The Jack Oil Co., operating in the old shallow sand section, Duval County, has sold one 20-acre tract and one 240-acre piece to Edward Stalbans of Kissellman & Stalbans, operating in the Jim Hogg County Field. The purchasers get the mineral rights to the deep sands if any develops, the Jack Oil Co. retaining its mineral rights to the shallow pay. The price is reported at $1,000 per acre, part cash and out of possible oil.

The Republic Production Co. abandoned No. 20 Dolbear in the Hull Pool as a dry hole after working it over.

The Noack Oil Co.'s No. 2 Phillips in the Rockdale-Minerva section of Milam County staged a gas blowout at 1,025 feet.

In Jim Hogg County, O. W. Killiam's No. 30 Martinez is a 110-bbl. well.

In Laredo districts, G. M. Ball's No. 1 Puig, Aviator Pool, is good for 50 bbls.

Mirando (Laredo and Jim Hogg County) crude is being shipped into northern Mexico for fuel, consignments going to the States of Sonora and Sinola.

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Dec. 29.—Many wells in the North and West Texas oil fields are shut down, some for the holidays and others because of the severe cold weather.

The Baker wildcat well of the Republic Production Co. in southwest Upton County has at last been put on the pump, after several weeks of untiring effort to plug off the water. During the first 24-hour test the well pumped 200 bbls. of fluid, about 25 per cent of which was water and b.s.

The South Electra district in Wichita County reported one good new producer late in the week, Bullington and associates' No. 12 Jennings, which is reported flowing at the rate of 12 bbls. an hour from sand at 1,597 to 1,617 feet. Perkins & Cullum's No. 1 Beaver-Electra, also in Wichita County, has been drilled 5 feet deeper to a total depth of 1,617 feet and is estimated good for 200 bbls. on the pump. The well was originally a producer of 145 bbls from 1,612 feet.

In Archer County the Texhoma Oil & Refining Co. has a new producer in its No. 1 Wolf in the new Oldham Pool. It got the sand at 1,313 feet and at 26 feet in is reported making oil at the rate of 300 bbls. daily.

In the Campbell Pool, northeastern Young County, the Tidal Oil Co.'s No. 14 Campbell is a very good new producer. On a 10-hour test it made 105 bbls. on the swab. Sand was topped at 909 feet and the hole has been drilled to a total depth of 927 feet.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Dec. 29.—The Dixie Oil Co. has bought 40 acres in Survey 12, north of Humble's new salt dome gusher in Duval County, a distance of 1,800 feet, paying $40,000 for the lease and $10,000 for one-sixteenth royalty. The Humble Co. paid $25,000 for 25 acres across the railroad track from its well.

Connections have been made and oil is being shipped out from the new well in tank cars.

LULL IN OKLAHOMA MARKET CONTINUES

(Continued from Page 20)

siderable higher now than they were at this time last year and for that reason a base price of $1.20 is not considered high enough by refiners. The railroads present the usual threat of buying on the open market or returning to coal if their proposals are not accepted. Some compromise agreement will probably result from present negotiations.

Gasolines and Naphths

What little change developed in gasoline prices was upward. Several refiners who had been selling 58-60 U. S. Motor at 9½ cents the first of last week advanced their price to 9¾ and 10 cents. Marketers, however, the first of the week were still able to cover their small orders at 9½ cents. Quotations for January shipment on this grade of gasoline were generally in excess of 10 cents. The low on 60-62 400 gasoline was 11 cents and 12 cents on 64-66 375 with a price range up to 11½ to 12½ cents. One small export purchase of 375 was reported from an Oklahoma refiner. Quotations on 68-70 350 and 360 had a spread of 12½ to 13½ cents. Naphtha was inactive, a check of several of the leading manufacturers failing to show any sales. Prices had not been lowered, however.

Kerosene and Distillates

A few refiners were among those seeking kerosene the first of the week. Several had oversold their own plant output for December shipment and were anxious to secure one or more cars for immediate shipment. Refiners in a position to handle this business were obtaining ⅛ to ¼-cent premium. Practically no 41-43 water white kerosene was available under 5⅛ cents Tuesday with predictions that 5½ cents would be the bottom quotation before the end of the week. The 42-43 water white was advanced to a low of 5½ cents. Reports from other sections of the Mid-Continent showed that the improvement in kerosene market was general.

One of the explanations heard for the kerosene strength lay in the demand for distillate. Increasing the output of distillates at a refinery generally means a reduction in the kerosene yield. Refiners with a zero cold test distillate advanced their prices at least ⅛-cent. The demand was principally for this grade and grades failing to meet the zero test were available at last week's prices. If the cold weather continues, further advances are expected. Last year cold weather late in December advanced the market ½-cent where it remained over January and most of February.

The few changes in fuel prices during the week were also upward. The 24-26 grade sometimes used in domestic burners advanced to a low of $1.27½. The low cold test fuels were in demand. A few sellers were refusing to sell, expressing confidence that prices on all grades would be 5 cents higher in a few days. Although gas oil prices were unchanged, more sellers were able to secure the high of the prevailing quotations. The dark grades were moving the first of the week at 3⅝ cents and the light grades as high as 3¾ cents.

Natural Gasolines and Blends

Natural gasoline manufacturers reported a better demand for Grade C. In North Texas this demand brought ¼-cent advance in prices but in Oklahoma the spread of 9½ to 9¾ cents was unchanged. The absorption grades were offered freely at last week's prices. Blend prices were unchanged.

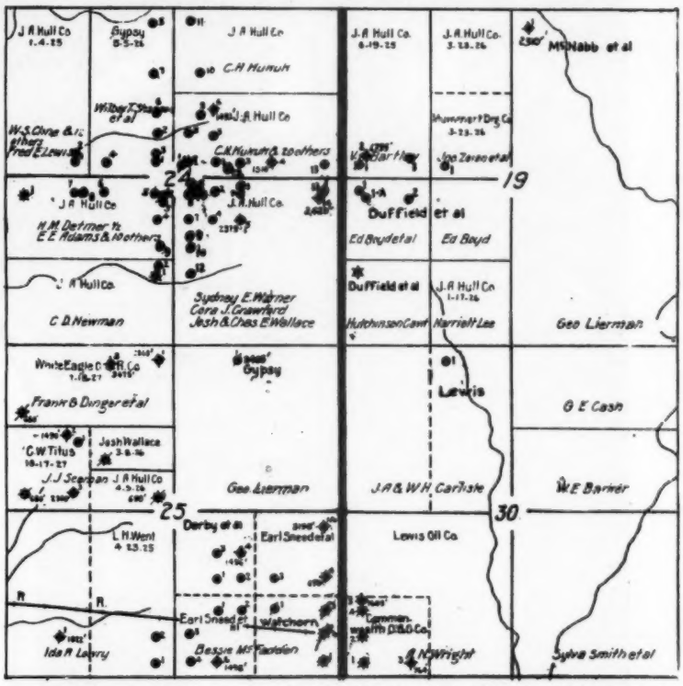
Lubricants and Wax

The movement of lubricants from the few Oklahoma refiners which manufacture them was steady. These manufacturers are a unit in declaring that higher crude prices mean higher prices on all grades of lubricants. No important changes are expected until the spring demand is under way unless the crude advance materializes. The wax market was inactive the past week and the one or two sales reported were made at slightly lower prices.

NEW GASOLINE RAIL CAR

A new gasoline rail car, designed to conform as far as possible in mechanical details as well as general appearance, equipment and interior finish to modern steam railroad designs has been developed. The first car of the new design was recently completed and delivered under its own power to the Susquehanna & New York Railroad at Williamsport, Pa. It contains main and smoking compartments with a seating capacity of 50 persons. The car, which is 60 feet long and weighs 61,000 pounds, is mechanically driven. The car may be driven by either or both of two four-cylinder 75-h.p. gasoline motors. Except for quick acceleration and for heavy grades less than one-half the power is required to operate the car. It is all steel.

NEW ACTIVITY IN OLD WINFIELD AREA



Duffield and others' No. 1-A, in the NW cor. SW of Section 19-32-5, Cowley County, Kansas, about 2 miles east of Winfield, started some new work in this old region when it came in for more than 1,500 bbls., although it immediately dropped down to around 800 bbls. Duffield's No. 2, shown on the map as a solid black dot, indicating a completion, was just starting up, as was its north offset, also.

FISHER

F

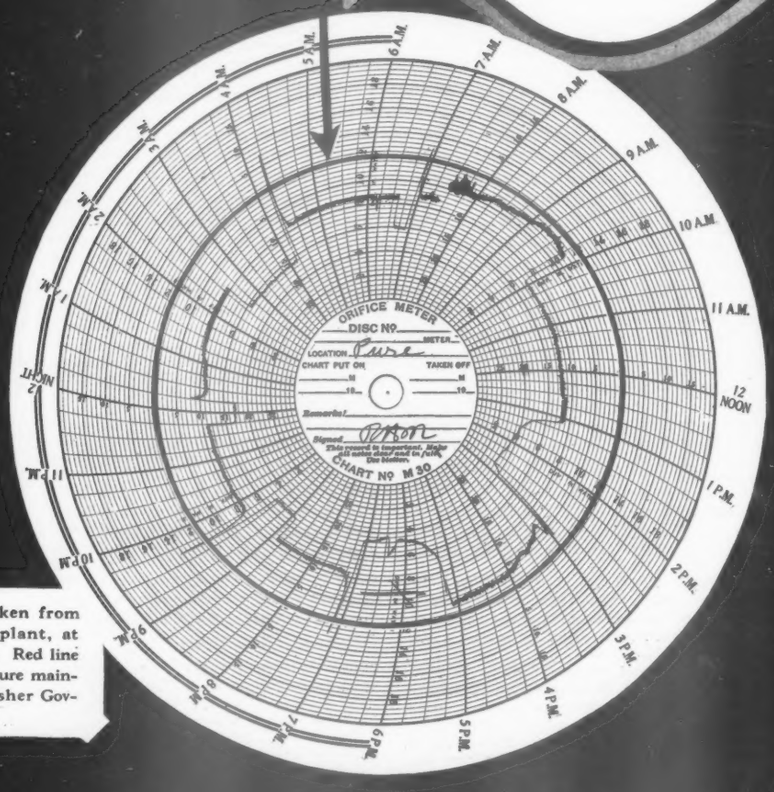
ULTRA SENSITIVE

The chart shown here offers proof in black and white of the reliable and unvarying performance of the Fisher reducing valve.

The line marked by the indicator on the chart forms a perfect circle, showing not the slightest variation during a twenty-four hour period.

These reducing valves go on for years with the same perfect service, giving an absolutely invariable pressure at all times.

Will reduce from high pressure to atmospheric, or any other that may be desired.



This chart taken from Stroud Gasoline plant, at Stroud, Oklahoma. Red line shows perfect pressure maintained with the Fisher Governor.

THE FISHER GOVERNOR COMPANY

375 FISHER BUILDING

MARSHALLTOWN, IOWA

Oklahoma Field Operations

By C. D. Lockwood

Christmas season observed by shutting down operations in many fields. Morgan & Flynn wildcat northeast of Davenport Field, Lincoln County, may not be failure in regular horizon, although it passed through a sand. Two other Davenport extension wells due in soon. North Baltimore well increases.

The Yuletide spirit prevailed over the Oklahoma fields during the past week while operators knocked off for a brief holiday to count their many blessings and realize how much they had to be thankful for this Christmas. With conditions in the industry as a whole better than they have been for several years, and much prosperity in the offing for 1926, the majority of oil men in this State celebrated the season in a more satisfactory manner than they have enjoyed since the war.

Not all of them, of course, passed the Christmas season without disappointments. Morgan & Flynn, successful wildcatters who opened the Davenport Field, may not have enjoyed the holidays as much as they otherwise would if their wildcat, northeast of that field, in Lincoln County, had come in a gusher instead of drilling through the sand. But they have been successful of late and their names have figured in the reports so prominently that one disappointment should not cast much of a cloud on their celebration. Besides, there is no certainty as this is written that their well may not yet picked up the Prue sand. The owners were so anxious to find out what lies below the sand through which they passed that they laid a new mile-long water line rather than thaw out the old one which had frozen last Saturday night.

This wildcat which is attracting so much attention is located in the NE cor. NW SW of Section 25-15-5, 1½ miles northeast of the nearest producing well. It had the Prue sand at 3,399 to 3,420 feet and sandy lime from 3,420 to 3,428 feet, and Monday morning was drilling at 3,428 feet in hard lime. While this apparently indicates that the Prue sand has been passed up, containing nothing more than 3,000,000 feet of gas, another interesting fact must be taken into consideration. This well has been running about 60 feet higher structurally than the Prairie Oil & Gas Co.'s No. 1 Sporleder, SE NE SW, Section 35, the nearest producer. It is still considered possible by close observers that production will be found in the regular Davenport level.

Two Wells Due Soon

Two wells are due in soon, one of which is just a mile south of the Flynn & Morgan wildcat. This is the Mid-Kansas Oil & Gas Co.'s No. 1 School Land, SW cor. NW, Section 36-15-5. It was standardizing Monday at 3,290 feet. The elevation of this well is 875 feet. Elevation of the Morgan & Flynn well is 901 feet and the Prairie Oil & Gas Co.'s Sporleder is 865 feet. On the western side of the field, The Texas Co.'s No. 1 Strough, NE cor. SE, Section 4-14-5, is about ready to extend the field a location to the southwest. It is a diagonal offset to the Prairie Oil & Gas Co.'s No. 15 Stout, which gauged 760 bbls. the first 24 hours from sand at 3,423-66 feet.

The Magnolia Petroleum Co. has staked a location in the SW cor. NE of Section 35. Other locations include the Pure Oil Co.'s No. 6, NW cor. SW SW, and the Prairie Oil & Gas Co.'s No. 2, SW cor. NW SW, same section, and the Magnolia Petroleum Co.'s No. 6, NE cor. SE SE, Section 34-15-5. The Amerada Petroleum Corp. has a location in the SE cor. of Section 26, on the 40-acre tract for which it is rumored a price of $20,000 was paid.

T. A. Johnson's No. 2 Colbert, SW cor. NW, Section 22-14-12, near Okmulgee, in the same county, found sand at 1,968-70 feet and was estimated good for 200 bbls. of 37.5 gravity crude.

In the North Baltimore Pool, Okfuskee County, the North Baltimore Oil & Gas Co. and Anglo-Tex Oil Co.'s No. 8, in the NW cor. SW NE, Section 13-12-11, was making 125 bbls. natural from the Wilcox sand at 3,336-40 feet. This is the second deep sand producer in the township. The discovery well, No. 6, was still making 320 bbls.

The Mid-Kansas Oil & Gas Co.'s No. 1 McFarland, NW cor. SW, Section 27-8-9, north of Holdenville in Hughes County, which had 15,000,000 feet of gas in sand at 3,055-67 feet, was drilling ahead at 3,175 feet and still making 7,000,000 feet of gas.

Northeast of Weleetka, in southeastern Okfuskee County, the Mid-Kansas Oil & Gas Co. has a well which is getting down to the interesting stages, in its No. 1, SW SE NW, Section 14-10-11. It was drilling at 3,715 feet Monday.

Creek County

In northern Creek County, the Terrell Oil Co. completed its old well No. 1, SW cor. Section 3-18-11, which was deepened to the Taneha sand at 1,880-92 feet and shot with 60 quarts, making 20 bbls. J. Livingston was drilling his No. 2, CWL SW SE, Section 33-18-11, at 1,300 feet.

B. E. Kennady had a rig up for his No. 2, NW cor. NE NW, Section 6-18-12, and was drilling his No. 3, CS half NE NE, Section 6-18-12, a twin well to No. 1, at 600 feet. This is a Red Fork sand test.

Deen & Vickers' No. 4, NE cor. SE SE, Section 10-17-11, was shot with 80 quarts and responded with 15 bbls. production. Kurrell and others were rigging up a machine for their No. 6 Davies, NW cor. SW SW, Section 11-17-11.

The H. F. Wilcox Oil & Gas Co. and others were swabbing 25 bbls. and cleaning out their No. 3, CNL NW SE SW, Section 1-16-11. Sand was found at 2,642-47 feet and plugged back 2 feet, then shot with 5 quarts. It was not completed. J. E. Crosbie was drilling below 500 feet in his No. 14, NE cor. SW, Section 10-16-11.

Simons & McGeehan abandoned their No. 1-A, NW cor. SE, Section 27-15-10, at 3,193½ feet. John Rebold was drilling his No. 1-A, C NE SW SW, Section 22-15-10, at 1,100 feet. The Continental Oil Co.'s No. 3, NE cor. NW NE, Section 34-15-10, was drilling below 300 feet.

A location was staked for Harry Newman's No. 1, SE cor. NW, Section 35-14-9.

The Elm Oil Co. spudded its No. 2, SE cor. NW SW, Section 17-14-10. The Producers & Refiners Corp. was drilling its No. 2, SW cor. NE SE, Section 18-14-10, at 500 feet and the Wilcox Oil & Gas Co. was down the same depth in its No. 2, SE cor. NW SE, same section. E. L. Kistler had 500,000 feet of gas in his No. 4, C SW SW, Section 21-14-10, from sand at 636-49 feet. The Wood Oil Co.'s No. 1, NE cor. SE, Section 30-14-10, was drilling at 300 feet.

The Burke-Greis Oil Co. abandoned its No. 1, CEL SE NW, Section 33-14-10, as dry at 3,419 feet.

A. D. Whitten and others' No. 1, SE cor. NW, Section 5-19-8, was pumping 10 bbls. of 57 gravity oil and 10 bbls. of water from sand at 1,987-2,008 feet.

Charles Page abandoned his No. 1, SE cor. SW SE, Section 4-19-9, as dry at 2,825 feet.

Billingslea & Shaffer Oil Co.'s No. 1, NW cor. SW, Section 7-18-9, was spudded. Madden and others were drilling their No. 1, C NW SW SW, Section 31-18-10, at 475 feet.

The Amerada Petroleum Corp. completed its No. 1, NW cor. SW NE, Section 19-17-10, for 2,000,000 feet of gas in sand at 2,097-2,134 feet. J. H. Wright was building a rig for his No. 5, NE cor. SE NW, Section 24-17-10, and was drilling at 300 feet in his No. 3, SW cor. NE NW, Section 25-17-10.

Bridged Over

C. H. Staker and others shot their No. 3, SE cor. SW NW, Section 16-16-9, with 35 quarts in oil sand at 2,675-90 feet and it bridged over, but was estimated good for 20 bbls.

The Transcontinental Oil Co.'s No. 3, SE cor. NW SW, Section 13-17-8, was good for 15 bbls. after a shot in sand at 2,248-79 feet. Alvord & West had timbers on the ground for their No. 3 Fry, SW cor. NW SE, Section 14-17-8, and staked a location for No. 2 in the CSL of the same quarter. The Atlantic Oil Producing Co. was drilling at 520 feet in its No. 6, CEL SW SE, same section. The Waite Phillips Co. was rigging up standard tools for its No. 1, NW cor. SE SE, Section 27-17-8.

In western Creek County, the Atlantic Oil Producing Co. and Phillips Petroleum Co. abandoned their No. 2, NW cor. SW NW, Section 3-15-7, at 4,099 feet. A 20,000,000-foot gasser was completed by the Lima Oil & Gas Co. in its No. 2, NE cor. SE NE, Section 25-15-7, in sand at 3,299-3,302 feet. In the same section, the Mountain State Oil Co.'s No. 2, NE cor. SE SE, was drilling at 300 feet.

The Wilcox Oil & Gas Co.'s No. 9 Henna, NW cor. SW NE, Section 2-15-8, was rigging up. The Empire Oil & Gas Co. completed its No. 2, NW cor. SW NW, Section 30-15-8, as a 30,000,000-foot gas well in sand at 3,284-85 feet.

C. G. Tibbens had a rig in place for his No. 1-A Brown, SW cor. SE, Section 1-14-8, and was drilling at 250 feet in his No. 5, NE cor. SE SW, Section 12-14-8. The Skelly Oil Co. spudded No. 11, SW cor. NW SE, same section, and the Texas & Pacific Coal & Oil Co.'s No. 3, NW cor. SW NE, same section, was likewise spudded. C. G. Tibbens' No. 2, SE cor. NE, Section 14-14-8, was drilling at 1,000 feet.

Payne County

In northern Payne County, the Josey Oil Co.'s No. 9 Lee, CSL SE SE, Section 35-19-5, was good for 1,500,000 feet of gas in sand at 1,985-88 feet, and a rig was in place for No. 11 on the same lease, NE cor. SE SE.

The O'Kansas Oil & Gas Co. and Marland Oil Co. completed their No. 2, SW cor. NW SE, Section 7-18-5, with a shot of 20 quarts resulting in 118 bbls. afterward from sand at 2,867-80 feet. Total depth was 7 feet lower. Rigs were up for the Producers & Refiners Corp.'s No. 2 Goss, NE cor. SE SW, and for the Twin State Oil Co.'s No. 1 Goss, SE cor. NE SW, same section.

The Carter Oil Co. abandoned its No. 2, SE cor. NW NE, Section 18-18-5, at 1,643 feet.

In the next township east, Blauner & Hartley were drilling their No. 1-A, C NW SE SW, Section 2-18-6, at 1,175 feet, after getting an estimated flow of 2,000,000 feet of gas at 1,095-1,100 feet. F. S. Freeland spudded and shut down his No. 2, CEL SW NE, Section 8-18-6.

In southern Payne County, the Home Gas Co. abandoned its No. 1, C NE SE NW, Section 6-17-4, at 3,658 feet. The Skelly Oil Co. completed its No. 1, C NE NE SE, in the same section, for 18,000,000 feet of gas and 60 bbls. of oil in sand at 3,683-3,743 feet. The Mid-Kansas Oil & Gas Co.'s No. 1, NE cor. NW, Section 33-17-4, was rigging up standard tools.

The Home Gas Co. was rigging up to deepen two old wells, its No. 1-A, NW cor. SW NW, Section 1-18-15, and No. 2, SW cor. NW, same section.

Tulsa County

West of Tulsa in the county of the same name, Holmes and others completed their No. 1, CNL SE NW, Section 22-19-11, for 15 bbls. of 36.2 gravity oil and some water after plugging back to sand at 2,236-67 feet from total depth of 2,278 feet. This well had an upper sand at 2,105-15 feet with a showing of oil.

In the southwestern corner of Tulsa County, the Sheridan Oil Co. abandoned its No. 1, SE cor. NW NE, Section 15-16-12, as dry at 2,378 feet. It was an old well deepened.

A duster for the western part of Tulsa County was contributed by the Glidden Oil Co., whose No. 2, SE cor. NW SE, Section 2-19-10, was dry and plugged at 2,600 feet.

In the northern part of the old Burbank Field, Osage County side, the Phillips Petroleum Co. completed its No. 12, CEL SE NE SE, Section 2-27-5, for 602 bbls. natural from sand at 2,918-66 feet. Following a shot of 130 quarts, this well made 1,227 bbls.

Okmulgee County

In northern Okmulgee County, the Devonian Oil Co.'s No. 11, CEL NE SW SW, Section 24-16-12, found 10,000,000 feet of gas in the Dutcher sand at 1,745-65 feet and was drilling ahead at 1,850 feet. The Sheridan Oil Co. was rigging up a machine for its No. 4 Wills, SW cor. NE NE, Section 28-16-12, and the Reno Oil Co. was spudding its No. 1, NW cor. NE NW, Section 29-16-12.

The Leonard Petroleum Co. completed its No. 1-A, CWL SW SW, Section 19-16-13, for 50 bbls. of 38 gravity crude following a 10-quart shot in the Wilcox sand topped at 2,190 feet and drilled to 2,229 feet.

Pawnee County

Northeast of the Watchorn Pool in Pawnee County, the Magnolia Petroleum Co.'s No. 1-A, C SW SW SW, Section 27-23-3, was drilling at 385 feet.

A couple of townships to the east, the Mid-Kansas Oil & Gas Co.'s No. 2, C SE NW NW, Section 4-23-5, had cellar completed.

In eastern Pawnee County, the Southwest Oil Fields Co.'s No. 3-A, SE cor. NE, Section 23-20-8, was dry and abandoned at 2,830 feet.

In southern Pawnee County, the Magnolia Petroleum Co.'s No. 8, SE cor. NW NW, Section 16-20-6, was shot with 40 quarts in sand at 3,026-90 feet, total depth being 3,098 feet, and completed for 45 bbls. of 38.3 gravity oil. Same company was building a rig for No. 9, NE cor. SW NW, same section, a south offset.

Stephens County

In eastern Stephens County, the Magnolia Petroleum Co. abandoned its No. 2, C NW NW NE, Section 11-2s-4w, as dry at 3,450 feet.

In the western part of the county, Winkler and associates completed their No. 1, C S half SE NW, Section 28-1s-8w, swabbing and flowing 90 bbls. of

35.8 gravity crude from sand at 1,687-89 feet. The Amerada Petroleum Corp.'s No. 10 Thompson, CWL NE NE, Section 32-1s-8w, was estimated good for 50 bbls. from sand at 2,254-66 feet. In the same section, Gant and others abandoned their No. 13, CNL NW SE, and the Lorraine Petroleum Co. also plugged its No. 2-A, CSL SE SW. The McMan Oil & Gas Co. completed its No. 4, NW cor. SW NW, Section 33-1s-8w, for 3,500,000 feet of gas in sand at 1,850-55 feet.

The Commercial Oil Co. abandoned its No. 6, C W half SW SW, Section 12-2s-8w, as dry at 1,790 feet.

The Pauline Oil & Gas Co. and Clark & Cowden completed their No. 2, NW cor. SE NE, Section 2-2-5w, good for 10 bbls. natural from sand at 1,477-78½ feet. Their No. 3 Dyche, SW cor. SE NE, same section, was drilling at 100 feet. Rogers and others' No. 1, C SE NW SE, Section 11-2-5w, was abandoned at 1,503 feet. Shaffer & Mankin's No. 1-A, SE cor. SW SW, Section 2-1-5w, was good for 12 bbls. from sand at 1,246-55 feet.

Cotton County

Northeast of Walters in Cotton County, the Magnolia Petroleum Co.'s No. 1 Bull, NW cor. Section 28-1s-9w, an old well deepening, from 2,248 feet, was trying to drill by a joint of 5-inch at 2,260 feet.

Along the Red River in southern Cotton County, Barker & Eaton rigged up their No. 1-A Johnson, SW cor. NE NW, Section 9-5s-10w.

Farther west, Tipton and associates were drilling at 1,800 feet in their No. 1, CEL SE NW NE, Section 6-5s-15w.

In northern Stephens County, the Magnolia Petroleum Co. had a rig on the ground for No. 1 Charleston, C NE NW SW, Section 32-1-5w. In the northwestern part of the county, the Day Oil Co. was drilling its No. 1, C SW NE, Section 10-2-9w, at 600 feet. Pace and others were building a rotary rig for No. 1 McGee, NW cor. NE SW, Section 23-2-9w.

Flowers & Frazier were rigging up a rotary for No. 3 Hall, C SE SE SW, Section 26-2-9w; the Magnolia Petroleum Co. had a rig up for its No. 1 Hall, C SW SW SE, same section. The Consolidated Oil Co.'s No. 1, CNL NW NW NW, Section 27-2-9w, was drilling at 300 feet.

In Section 30-2-9w, Comanche County side of the line, the Continental Oil Co.'s No. 1, C NW NW SE, was good for 112 bbls. initial from sand at 2,030-39 feet, later dropping to 40 bbls. It was completed.

Garvin County

In southern Garvin County, the Texas & Pacific Coal & Oil Co.'s No. 2, CSL SE SE SW, Section 16-1n-3w, was swabbing 60 bbls. from sand at 1,623-34 feet and cleaning out. The Mid-Continent Petroleum Corp.'s No. 1, C NW NW SE, Section 17-1n-3w, swabbed 45 bbls. the first 18 hours and 38 bbls. the next 12 hours from sand at 1,768-84 feet. The Texas & Pacific Coal & Oil Co. was drilling below 1,125 feet in its No. 1, C NW NW NE, Section 21-1n-3w.

Carter County

In Carter County, Lively-Tucker and others rigged up a rotary and shut down their No. 1 Pierce, C NE NE SE, Section 18-2s-2w.

About 12 miles west of Ardmore, Carter County, J. F. McCury was drilling his No. 2 Reed, CEL SE NW SE, Section 19-4s-1w, at 35 feet in a 15-inch hole.

Merrick-Kirk was building a rotary rig for No. 4-A, C NW NW SW, Section 5-3s-2w, a twin to No. 4. The same interests completed their No. 6, C NE SW NE, Section 8-3s-2w, as a 50-bbl. pumper from broken sand at 2,401-3,124 feet. The Schermerhorn Oil Co.'s No. 3 Colbert, C SE NW NE, same section, was drilling below 3,000 feet.

In southeastern Grady County, Goldeline, Critchelieu, Clark & Cowden spudded and shut down their No. 1, SW cor. NW NW, Section 27-3-5w. In the same section, Joe Ray and others abandoned No. 1, SW cor. NE SE, at 1,501 feet. The Magnolia Petroleum Co. was drilling at 125 feet in its No. 2, C NE NE NE, Section 28-3-5w.

Northeast of Lawton in Comanche County, Becker, Reed and others' No. 1, C SE SW, Section 3-3-10w, was pumping 22½ bbls. from sand at 1,432-49 feet, with total depth 1,450 feet. It was not completed, however.

Near Madill in Marshall County, Lane & Wasson abandoned their No. 1, CNL NE NE, Section 25-5s-5e, at 712 feet.

Near the Red River, south of Marietta in Love County, the Magnolia Petroleum Co. abandoned its No. 1, C NE NE SE, Section 13-8s-2e.

In Jefferson County, A. C. Brown and others were drilling at 50 feet in their No. 1, SE cor. NE NW, Section 33-6s-5w. The Carter Oil Co.'s No. 1, SE cor. NW NE, same section, was drilling at 600 feet. The Humble Oil & Refining Co.'s No. 6, NE cor. SE, same section, was flowing 200 bbls. of 36.7 gravity oil from sandy lime at 1,488-95 feet and 1,495-1,502 feet.

South of Chickasha in Grady County, Becker and others were drilling at 50 feet in their No. 1, C NW NE, Section 29-6-7w.

In eastern Caddo County, English & Jacobs were drilling at 120 feet in their No. 1, SE cor. Section 31-6-9w. The Magnolia Petroleum Co.'s No. 7, SW cor. NE SE, Section 3-5-9w, was also drilling at 100 feet.

Kay County

The Carter Oil Co. seems to think there is something worth drilling for in the region north of its old Bershe well northeast of Blackwell. Its No. 1-A, NE cor. SE NE, Section 33-28-1e, was rigging up.

Souligny and others were drilling below 400 feet in their No. 1, NE cor. NW, Section 16-26-3.

McIntyre & Foster plugged their No. 1 C SE SE NE, Section 29-27-1w, as dry at 4,151 feet.

Jack O'Hare was drilling at 335 feet in his No. 1, C SE NE NE, Section 22-27-4.

In the North Braman district, The Texas Co.'s No. 1, SE cor. NE, Section 20-29-1w, was drilling at 166 feet. The Comar Oil Co.'s No. 5, SE cor. SW, Section 21-29-1w, was good for 585 bbls. of 41.2 gravity oil natural from sand at 2,085-2,100 feet. The Comar Oil Co.'s No. 2-B McCormick, SW cor. SE, Section 21-29-1w, had a rig building. The same company was building a rig for its No. 1, NW cor. NE NW, Section 28-29-1w, and for No. 2 Murphy, NE cor. NW, same section.

The same concern's No. 2, CNL NW NE SW, Section 5-28-1w, in the South Braman Field, was drilling at 640 feet.

The Tidal Oil Co. was spudding its No. 2, C NW SE, Section 8-27-1w, at 150 feet. The Carter Oil Co. was drilling below 450 feet in its No. 2, NE cor. NW NE, Section 17-27-1w.

About 2 miles southwest of Newkirk, the Mississippi Valley Oil Co. was drilling its No. 1, C NW NE, Section 3-27-2, at 150 feet.

The Harold Petroleum Co. spudded its No. 2, C SE SW SE, Section 4-47-1w, north of the Otstot Pool. The Blackwell Oil & Gas Co.'s No. 1, C SE SE SE, Section 5-27-1w, was making 270 bbls. of oil and 15 bbls. of water from sand at 3,454-60 feet. Poling and others had a rig on the ground for their No. 1, SE cor. NE, same section.

In the Bu-Vi-Bar Pool west of Perry, Noble County, the Magnolia Petroleum Co.'s No. 1, CNL NW NW NE, Section 22-21-2w, was making 1,000,000 feet of gas from sandy shale at 2,436-48 feet. Total depth was 2,520 feet and the 8-inch was being underreamed to 2,363 feet.

A wildcat test located about 6 miles east and a mile north of the famous K-D well has a rig up. It is the Mid-Continent Petroleum Corp. and Marland Oil Co.'s No. 1 School Land, SW cor. SE SW, Section 36-23-1w.

Pool—	Wells
Cromwell	408
Papoose-Gilcrease	210
Wewoka	144
South Weleetka	49
Yeager	12
Gypsy	12
Wildcats in 9-8	5
Burbank	1,808
North Braman	26
South Braman	17
Watchorn	21
Thomas	16
Hubbard	31
Davenport	95
Stroud	71
Skellyville	6
Tonkawa	776
Tonkawa deep	132

Kansas Oil Field News

By C. D. Lockwood

Kansas operators are all prepared to believe now that there is a Santa Claus for a gentleman by that name passed out a few tokens of the season there last week. Chief among these was a brand-new gusher extending the Little Golden Lane across the county line northward into Lyon County. It is known as Ritchey & Moore's No. 1 Pixlee, SW cor. SE, Section 34-21-10, and while it came in the early Christmas gifts, arriving a week ago Monday at the rate of 70 bbls. an hour, it was still holding up over the holidays and more oil could be swabbed from it than the Skelly Oil Co.'s pipe line could handle. Sunday it swabbed 600 bbls. in 10 hours. Nine new wells are starting up in the vicinity of this unusually good producer.

Competing with the southern Lyon County district for the limelight is the Tobler area in eastern Butler County, on a direct southwest line from the Golden Lane. This are was opened up some time ago by Boyle and others in their No. 1 Tobler, NE cor. SW SE, Section 22-27-7, but the impetus to the play around it was given by the Amerada Petroleum Corp.'s No. 1 Tobler, SE cor. NW SE, same section, which swabbed 472 bbls. in 18 hours on December 19 from sand at 2,670-94 feet. The discovery well was deepened this week 3 feet to 2,713 feet. Top of sand was 2,704 feet. It had been pumping 55 bbls. and the Amerada well was holding up to nearly 500 bbls. daily on the swab.

The Amerada Petroleum Corp. has staked locations for No. 2, NE cor. NW SE, and for No. 3, SW cor. NW SE, in the same section. Boyle and others have a location for No. 3, NW cor. SW SE, same section. The Sinclair Oil & Gas Co. is starting a new one, its No. 3 Bahnhill, NW cor. NE SE, and the Phillips Petroleum Co. has a new location in its No. 1 Richardson, SE cor. NE SW, all in Section 22.

Cowley County

In the Slick-Carson Field of Cowley County, the Carter Oil Co. completed its No. 8, C SE NW SE, Section 19-32-3, for 135 bbls. from sand at 2,605-21 feet. Gravity tests 38.5 degrees. T. B. Slick spudded his No. 3-A, C SW SE NE, and completed his No. 6, CEL NE SE NE, same section, for 30 bbls. of oil and 40 bbls. of water in sand at 2,600-20 feet after plugging back 2 feet.

In the Rainbow Bend Field, the Waite Phillips Co.'s No. 6, C NE SE SW, Section 21-33-3, topped sand at 3,246 feet, had gas at 3,260 feet, oil at 3,265 feet and at total depth of 3,282 feet in sand was good for 200 bbls. of 39.6 gravity crude.

The new well of Duffield and others, No. 1-A in the C NW NW SW, Section 19-32-5, which topped the sand at 2,987 feet, found first oil at 3,014 feet and at total depth of 3,027 feet gauged 1,580 bbls. the first 24 hours, did 950 bbls. the second day. Gravity of the oil tests 40.5 degrees. The same interests spudded their No. 2, C NE NW SW, same section. The J. A. Hull Co. was drilling at 460 feet in its No. 3, C SE SW NW, same section, and spudded its No. 14 Kukuk, C NE SW NE, Section 24-32-4, and was building a rig for No. 14 Wallace, C SE NE SE, same section.

A wildcat east of Arkansas City was spudded by the Phillips Petroleum Co.

(Continued on Page 166)

Garber Field

In the north end of the Garber Field, the Prairie Oil & Gas Co. was drilling its No. 11, SE cor. Section 12-22-4w, at 1,208 feet. It is a twin well. The company's No. 6, same location, was pumping 40 bbls. from sand at 3,594-3,620 feet, after it had been plugged back from 3,624 feet. The Sinclair Oil & Gas Co. had rigs on the ground for No. 37 North Walker, C NW NE NE, Section 13-22-4w, and for No. 32, C NE SW NE, same section, and for No. 34, C SW NW NE, same section.

Franchot and others were drilling at 1,160 feet in their No. 16, SW cor. Section 7-22-3w. The Sinclair Oil & Gas Co. had a cellar for No. 28 Hartley, C SE NW NW, Section 18-22-3w, and was drilling at 687 feet in its No. 27, NW cor. same section.

Boepple and others had 800 feet of oil and a show of water in their No. 1, NW cor. SW SW, Section 20-22-3w, from sand at 1,697-1,700 feet.

Report of Leading Pools

Following is a comparative report of leading Oklahoma pools:

Bbls.	Week Ended	Dif. from week before Bbls.	Wells
21,307	12-23	Inc. 519	Inc. 1
14,642	12-23	Inc. 48	Inc. 1
12,029	12-23	Inc. 4,049	Inc. 1
1,946	12-23	Inc. 44	Inc. 2
.742	12-23	Dec. 86	Same
220	12-23	Dec. 24	Same
298	12-23	Dec. 6	Same
46,361	12-23	Dec. 367	Dec. 1
2,437	12-22	Inc. 783	Inc. 1
3,855	12-22	Dec. 677	Same
2,144	12-22	Inc. 58	Same
15,961	12-22	Inc. 96	Same
2,100	12-22	Inc. 55	Same
21,232	12-21	Dec. 449	Inc. 4
2,929	12-21	Dec. 397	Same
1,891	12-21	Dec. 53	Same
40,997	12-19	Dec. 988	Same
27,872	12-21	Dec. 917	Inc. 1

Tonkawa Production

Following is the daily average production of the deep sand Tonkawa wells for the week ended December 21, by companies:

Company and Lease—	Wells	Bbls.
Amerada Pet. Corp., Woods	8	801
Blackwell O. & G. Co., Ruzek	1	0
Blackwell O. & G. Co., McDaniels	3	335
Comar Oil Co., Beverlin	18	6,795
Comar Oil Co., Blubaugh	9	986
Comar Oil Co., Blubaugh "C"	1	4
Comar Oil Co., Gaume	9	718
Comar Oil Co., E. Endicott	8	1,182
Comar Oil Co., L. Endicott	5	855
Comar Oil Co., Ogg	1	0
Comar Oil Co., Pettit	6	42
Friedman, Siler	1	0
Gypsy Oil Co., Shawver	17	2,610
McMan Oil & Gas Co., Suiter	1	0
Mid-Cont.-Marland, School	4	1,663
Pennok Oil Co., Endicott	7	98
Phillips Pet. Co., McDaniels	1	22
T. B. Slick, Endicott	7	926
The Texas Co., Davis	10	2,491
Ments Oil Corp., Mahoney	6	6,412
Wentz Oil Corp., McKee	9	1,917
Total, deep sand	132	27,872
Total last week	131	28,789
Difference	1	917

Total deep sand production to date, 26,972,665 bbls.

Okmulgee County

In eastern Okmulgee County, A. G. Hazlett completed his No. 6, CNL SW NE, Section 11-13-14, for 15 bbls. of 36 gravity oil. Sand was found at 1,267-75 feet, and the hole was bottomed at 1,282 feet in slate. The well was shot with 60 quarts. C. H. Lebow's No. 9, C NE NE SW, Section 15-13-14, was good for 130 bbls. in sand at 1,895-1,918 feet, and his No. 10, C SE NE SW, same section, was drilling at 635 feet. The Roxana Petroleum Corp.'s No. 4, NW cor. SW SE, same section, was drilling at 750 feet, and No. 5, CWL NW SE, same section, at 720 feet.

E. J. Lamberts' No. 6, CSL SE SE NW, Section 8-13-15, was good for 250,000 feet of gas in sand at 700-61 feet.

In the southern part of Okmulgee County, the Nickolson Oil Co.'s No. 2, C NW NE SE, Section 14-11-13, was a completion making 2,000,000 feet of gas from sand at 1,300-31 feet.

In southeastern Osage County, just northwest of Tulsa, the Winona Oil Co.'s No. 2, CEL SE NW, Section 29-20-12, topped the lime at 1,609 feet and was drilling below 1,920 feet.

Tulsa County

In eastern Tulsa County, Kelso and others completed a 5-bbl. well in their No. 8, CSL SW SW, Section 36-18-14.

(Continued on Page 166)

Cracked Gasoline Knoxless-Pullsmore

Any motor owner who has once used straight cracked gasoline will never again be satisfied with straight run or blended

Try it in your own motor and you will quickly realize why

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
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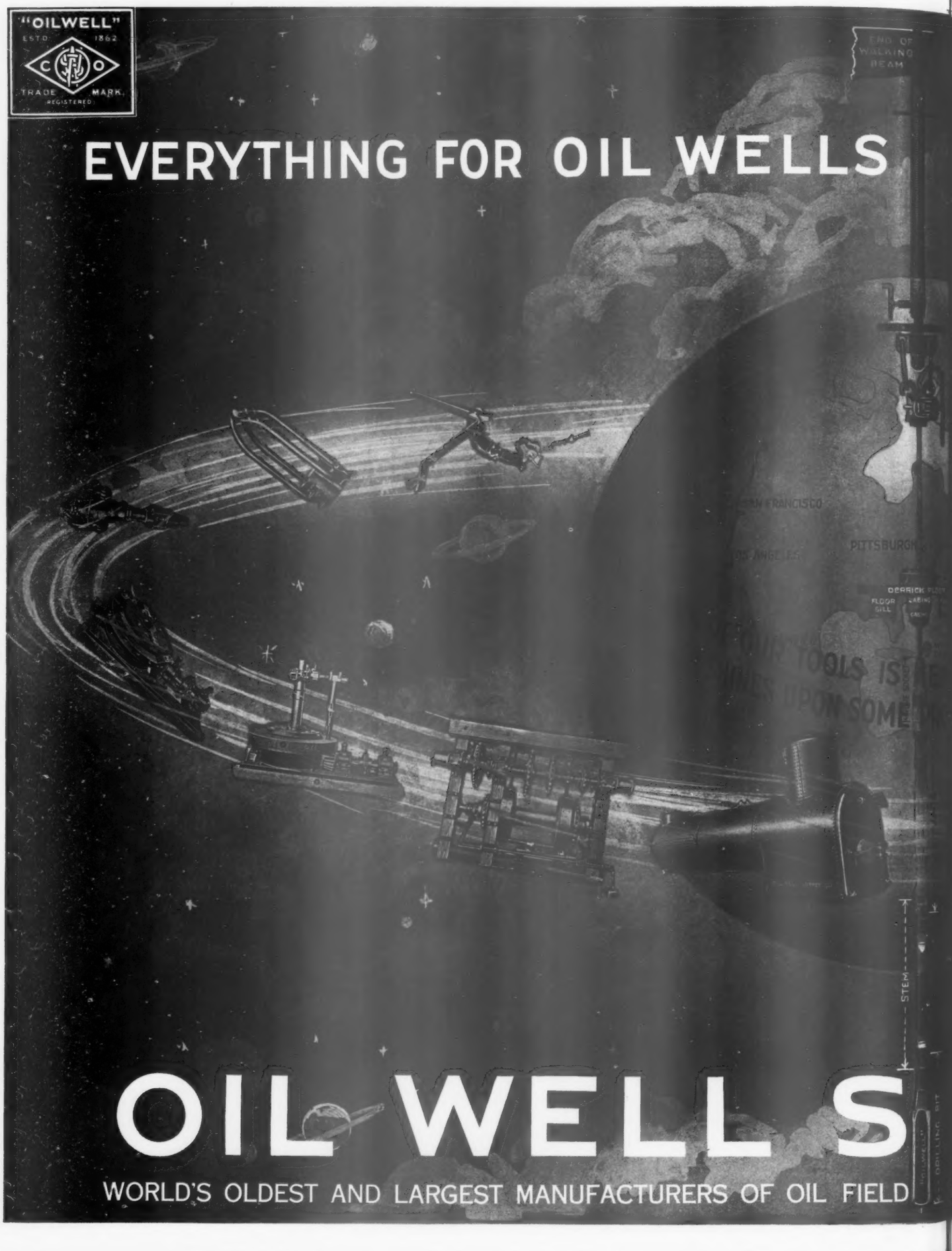
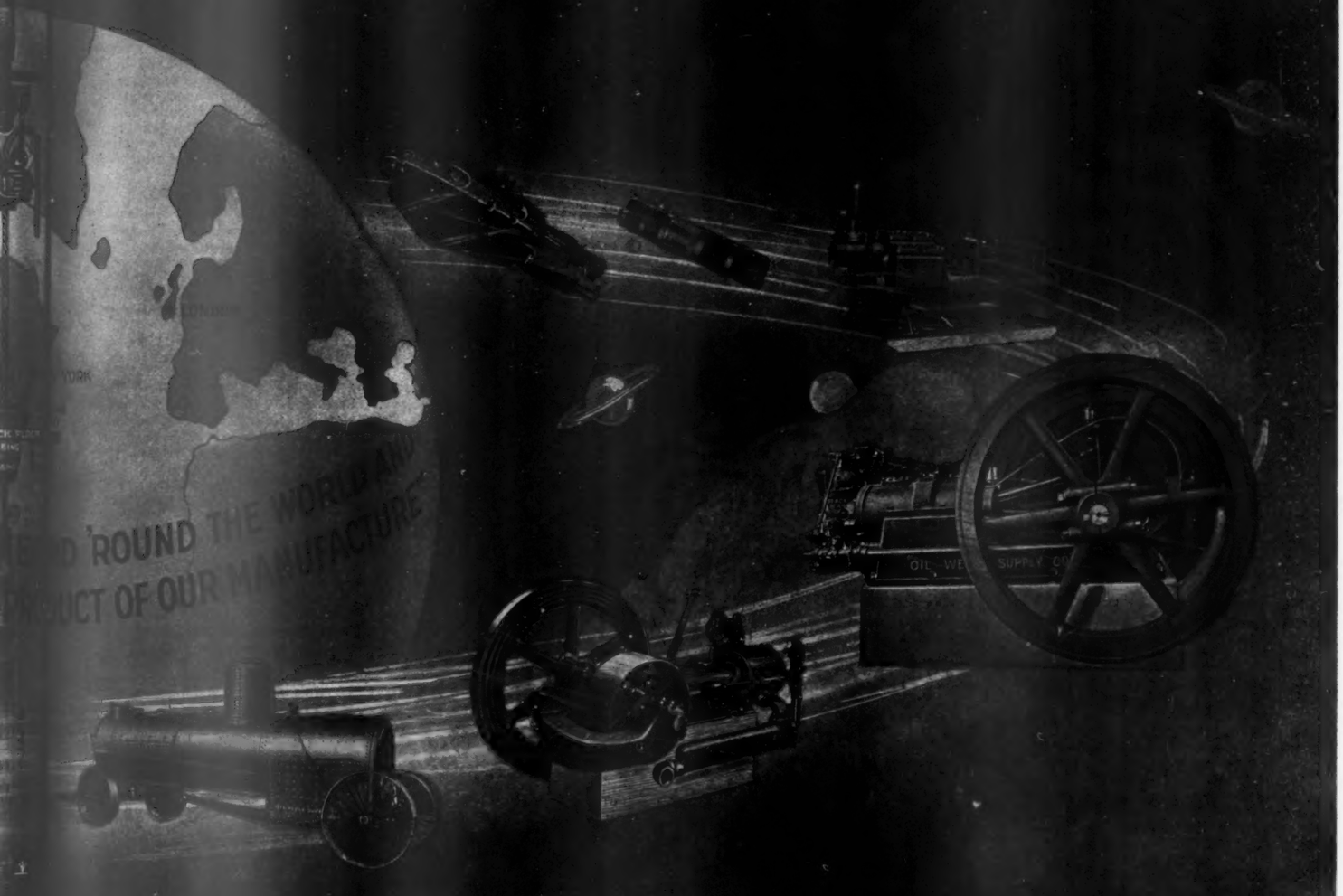

"OILWELL"
EST'D 1862
TRADE MARK
REGISTERED
EVERYTHING FOR OIL WELLS
END OF WALKING BEAM
PITTSBURGH
DERRICK FLOOR
FLOOR SILL
STEM
OIL WELL S
WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD

"OILWELL"
ESTD. 1862
TRADE MARK.
REGISTERED

ANY SIZE - ANY DEPTH - ANYWHERE



UPPLY CO.

EQUIPMENT

BRANCH STORES IN ALL OIL FIELDS

North Louisiana-Arkansas

By M. L. Vaughn

Gains in production of various districts in Louisiana offset losses in Arkansas fields. Stephens Field in Arkansas aided considerably by completion of well which started at 1,000 bbls. and settled to 300. Nevada County becoming more active while development expected to start near Keisker well.

SHREVEPORT, La., Dec. 28.—A decrease of 1,475 bbls. a day in Arkansas production was more than offset by an increase of 1,480 bbls. in Louisiana's daily average, nearly every district in Louisiana showing an improvement during the past week. Louisiana production for the week averaged 45,655 bbls. a day and Arkansas, 194,595 bbls., a total of 240,250 bbls. daily, distributed as follows:

North Louisiana	
Bellevue	2,520
Caddo, light	8,810
Caddo, heavy	3,130
Cotton Valley	8,795
De Soto and Red River	3,945
Elm Grove	690
Haynesville	11,415
Homer	6,040
Urania	310
	45,655
Arkansas	
Smackover, heavy	163,000
Smackover, light	20,315
El Dorado	7,985
Nevada	1,540
Stephens	1,755
	194,595
Total both fields	240,250
Increase	5

Stephens Field

Interest in the Stephens Field, Ouachita County, Arkansas, has been greatly augmented by the completion of the Buffalo Oil Co.'s well on the Morgan lease in Section 22-19-15, which came in with an initial production estimated at over 1,000 bbls. and settled down to 300 bbls. a day. This is one of the best wells ever completed in the Stephens district and extends the field 2½ miles northeast of the old Stephens Field and to within 2½ miles of the old Hunter well, which led to the first development of the Arkansas oil fields. The oil tests 14 gravity, corresponding to that of the Nevada district, and is flowing into earthen storage.

Nevada County activity has also taken on a livelier tone since the completion of the Greeson well in Section 2-14-21, which extended the pool half a mile northeast and is pronounced one of the best wells in this district.

The Keisker well in Union County, located in Section 9-17-16, has practically opened up a new pool in Union County, as it is 5 miles from production, between the Louann and El Dorado fields, and can hardly be regarded as belonging to either pool. The well has been put on the beam and is pumping 40 bbls. a day at 1,207 feet and already a new townsite has been laid out in its vicinity. The Simms Oil Co. has purchased a half interest in the 40 acres on which the Keisker well is located, and will continue development of the lease. Business men of Smackover are raising a fund for improving the road between Smackover and the new well in an effort to secure the trade which will come as a result of the new development. The well is located in low, marshy ground, and the roads in the vicinity are almost impassable.

Ouachita County Drilling

Gulf Refining Co. is arranging to drill deeper in No. 8 Bennett, Section 33-15-15; Houston Oil Co.'s No. 7 Hinton, Section 5-16-15, sanded up and trying to pull liner and test at 2,395 feet; Howell and others are drilling at 2,120 feet in No. 5 Williams, Section 3-16-15, and Humble Oil & Refining Co. has derrick up for No. B-9 Arnold, Section 26-15-16, bailing to test 8 feet of sand at 2,445 feet in No. 3 Hildebrandt, Section 28-15-15, and set 6-inch at 2,590 feet in No. 4 H. Laney, Section 31-15-15, and at 2,350 feet in No. 6 Jones-Umsted, Section 4-16-15.

Imperial Oil & Gas Co. drilling at 1,850 feet in No. 9 McClannahan, Section 6-16-15; Kouri and others side tracking drill stem at 2,460 feet in No. 2 Snowhill Church, Section 28-15-15; Magnolia Petroleum Co. drilling No. 10 J. Goodwin, Section 5-16-15, at 960 feet and bailing to test No. 11, same section, at 2,358 feet; Marine Oil Co. set 6-inch at 2,353 feet in No. 11 Snyder, Section 34-15-15, and Ohio Oil Co. has 400 feet of oil in 66 feet of sand at 2,055 feet in No. B-8 Lewis, and drilling at 200 feet in No. B-9 Lewis, Section 26-15-16.

Phillips Petroleum Co. has 1,200 feet of oil in 1 foot of sand at 2,555 feet in No. 10 Laney, Section 31-15-15; Pure Oil Co. tested salt water at 2,385 feet and drilled deeper and set 6-inch at 2,448 feet in No. 11 Brister, Section 28-15-15, and is coring at 2,072 feet in No. 1 Stout Lumber Co., Section 27-15-18; J. D. Reynolds, arranging to test 120 feet of broken formation at 2,257 feet in No. 1 Smith, Section 13-15-17, and Sam Richardson drilling at 2,535 feet in No. 3 Rhoten, Section 32-15-15.

Simms Oil Co. pulled 4½-inch casing in No. 5 Hildebrandt, Section 28-15-15, and is plugging back to make a well in the first sand, tested salt water at 2,675 feet and cemented bottom of hole in No. 10 F. A. Laney, Section 31-15-15, and is coring at 2,660 feet in No. 11, same section, and rigging up to drill No. 8 N. B. Murphy, Section 29-15-15. Standard Oil Co. is plugging back to test in the first and second sands in No. 6 Powell, Section 34-15-15, and No. 7 Umsted, Section 32-15-15, and set 6-inch at 2,380 feet in No. 31 Umsted, same section.

Superior Oil Co.'s No. 3 Flannigan, Section 6-16-16, shut down at 2,375 feet on account of high water, and Woodley Petroleum Co. drilling No. 1 Umsted, Section 4-16-15, at 1,600 feet.

Carbon Black Case

Refusal to grant a permit to an eastern ink manufacturer to enter the Monroe gas field for the purpose of manufacturing carbon black, has precipitated a crisis which it is threatened to result in carrying the case to the Federal courts. It is claimed that the State has no right to exclude this industry and that the authority of the State conservation department will be tested in an appeal to the higher court.

Generally speaking, Monroe citizens are in favor of permitting the carbon interests to operate in Louisiana, as it brings considerable money and active business interests into that territory, but it is realized that if not curtailed by conservation rules, the gas supply would inevitably be exhausted in a very short time. As a result of the efforts of the department, rigid curtailment of gas consumption in the Monroe Field has been inforced and the carbon black industry is now enjoying a better market and higher prices for its product than at any time for several years. Consumption of gas for the manufacture of carbon black during November averaged something over 350,000,000 feet per day.

The first conviction in Ouachita Parish for "overpulling" a gas well in the Monroe Field was obtained last week when the court ruled against the Consumers Gas Co. and imposed a fine of $500. Officials of the conservation department claimed the company took more than its allotment of gas from its No. 2 Ritchie. A conviction was obtained some time ago against the Thrift Oil & Gas Co. in Union Parish and a case against the Carson Carbon Co., in Morehouse Parish, is pending.

Work is progressing rapidly on the gas line from the Monroe Field to Baton Rouge, and it is expected that Natchez, Miss., will be supplied with natural gas by early spring. The line is being built by the Morris interests who own thousands of acres of gas producing leases in the heart of the Monroe Field and have an open flow production from some 40 producing wells of approximately 500,000,000 feet per day. More than 500 men are at work on the line and the most difficult part, through the swamps and lowlands north and west of Natchez, has been completed.

Completions—Union County

Operations in Union County last week resulted in the completion of 16 wells with new production amounting to 1,370 bbls., 103,000,000 feet of gas and one failure.

Amerada Petroleum Corp.'s No. 11 Flenniken, Section 6-16-15, is making 80 bbls. at 2,570 feet.

Carnahan and others tested dry at 3,005 feet in No. 1 Cooms, Section 24-18-16, and was abandoned.

Daniels & Rowe completed No. 8 Tatum, Section 7-16-15, flowing 240 bbls. at 2,434 feet.

E. M. Jones got a 40-bbl. pumper at 2,647 feet in No. 3 Cook, Section 16-16-15.

Lion Oil & Refining Co.'s Murphy No. C-11, Section 8-16-15, is flowing 200 bbls. at 2,465 feet.

J. S. Lyell completed No. 11 fee, Section 3-16-15, making 20,000,000 feet of gas at 2,625 feet.

Magnolia Petroleum Co.'s No. 8 Hatfield, Section 7-16-15, made 140 bbls. at 2,553 feet and No. 8 Hatfield, same section, made 140 bbls. at 2,553 feet.

Mazda Oil Co. tested dry at 2,736 feet in Lawton No. R-4, Section 10-16-15, and the test was abandoned.

O. G. Murphy's No. 8 on the T. C. Murphy lease, Section 9-16-15, is flowing 200 bbls. at 2,428 feet.

Phillips Petroleum Co. completed No. 2 Thompson, Section 7-16-15, making 15,000,000 feet of dry gas at 2,717 feet.

Raines and others completed No. 1 Dumas, Section 9-17-16, flowing by heads at the rate of 40 bbls. a day at 2,070 feet.

A. H. Ramage completed No. C-9 Lawton, Section 10-16-15, making 30,000,000 feet of dry gas at 2,643 feet.

Roxana Petroleum Corp.'s No. C-5 Flenniken, Section 8-16-15, is flowing 200 bbls. at 2,384 feet.

Southern Crude Oil Producing Co. completed No. 9 Graves, Section 3-16-15, making 30,000,000 feet of dry gas at 2,617 feet.

Thurman and others completed No. 8 Wilson, Section 6-16-15, making 8,000,000 feet of gas and 125 bbls. of oil at 2,565 feet.

Ouachita County

Completions in Ouachita County numbered only three, with one failure and three producing wells adding 200 bbls. to the output of the field.

Ohio Oil Co. completed No. B-7 Lewis, Section 26-15-16, pumping 20 bbls. at 2,090 feet.

Phillips Petroleum Co.'s No. 14 Joyce, Section 33-15-15, tested dry and was abandoned at 2,589 feet.

Superior Oil Co. completed No. 2 Flannigan, Section 6-16-15, making 90 bbls. at 2,560 feet.

The Texas Co. completed No. 1 Wright,

Rocky Mountain Area

By F. B. Taylor

CASPER, Wyo., Dec. 26.—The Utah Oil & Refining Co. has brought in its fourth well on the Black Mountain Dome in Hot Springs County, Wyoming. This new producer is on Section 31-43-90, about 30 miles east of Thermopolis and the pay was found in the Tensleep sand about 3,200 feet. The well is shut down with the bit in the sand about 2 feet and is estimated good for 450 bbls.

This production is black oil and this completion makes four producers that the Utah Oil & Refining Co. has on the Black Mountain structure. So far, no attempt has been made to market this oil and the company is looking into the future for a market for the crude.

The Wyoming Syndicate, of Riverton, has secured a tract of the Shoshone Indian reservation land adjoining the Dora Enos lease at Pilot Butte Field. This tract is only about a half-mile from the Argo well that found production in the Muddy sand about a month ago. C. E. Nelson, of Riverton, is heading the syndicate and states he will move a rig on the lease at once and drill a test to the Muddy sand.

F. G. Ostland, oil operator of Montana, has secured a permit on Section 9-51-100 in the Oregon Basin Field in Park County, Wyoming, and is starting a well to test the acreage. This well is about a mile from the Ohio's gas well drilled on that structure last summer and it is the intention of Mr. Ostland to drill through the gas sand for a test of the lower horizons.

Test of Deeper Sands

The Ohio Oil Co.'s test of the deeper sands, drilling on the Hidden Dome, in Washakie County, Wyoming, is below the main gas sand found at 1,770 feet and which has been the objective of all the wells at Hidden Dome up to now. According to the way the formations are coming in, the Dakota, (Cloverly or Greybull), sand should be found at 2,100 feet. This well is located on Section 31-48-90.

In the LaBarge Field, in Lincoln County, Wyoming, a scarcity of water is holding up work and water wells are to be put down. The Beneficial Oil Co. is shipping production by tank trucks to the railroad and this crude is going out at the rate of five cars weekly.

The Cane Creek well of the Midwest Refining Co., about 12 miles south of Moab, on the Grand River, has been shut in with mud and a new rig is being built. This well came in as an oil producer and flowed wild. The drillers had shut down for breakfast, leaving the tools in the hole when the well came in without warning and made several flows. The oil and gas caught fire and the rig and tools were destroyed.

The Marland Oil Co. drilling on Section 32-38-82, is reported to have found a producer in the Lakota sand on the

(Continued on Page 173)

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A Letter From Nye

TO THE OIL INDUSTRY,
Gentlemen:

HELLO!

Did you ever stop to think that there isn't much difference between hello and ohell—that ohell is just hello turned around? There's nothing finer in the English language, it seems to me, than a good old American "Hello!" But give her the reverse English and you get a cussword—and when you say "hello" to some people that is what you get.

But you are not that kind so I won't hesitate to write you occasionally during the coming year in The Oil and Gas Journal just to say HELLO.

This world, after all, seems to be divided between the helloers and the ohellers—the optimist says hello—the pessimist ohell. Just now the ohellers are trying to make us believe that business is off for months and that the country is on the way to the spot the ohellers mention.

Well, I am one of the helloers and I am saying hello to the readjustment we knew had to come and I am glad it is proving so easy—we all thought it would be a major operation. But the Doctor says now that we will be out in a few weeks at most. The thing we dreaded is about over and mother and child are doing well. We'll be sitting up in February, convalescent in March, and running footraces in April—if we helloers have our way.

Of course, some of us had bleeding of the inventory, or a pain in the profits, and right now we may be hungry in the order department but it was "SOME TIME" we had and we are getting off mighty easy.

So I welcome you to the ranks of the helloers and if any man says ohell to you shoot him on the spot and don't be particular about the spot. Them's my sentiments, cross my heart, hope to die.

Harry J Nye

P. S.—Which reminds me—how you fixed for pipe dies—solid Armstrong or Nye Toledo type? Our new catalogue sent on request.

Nye Saunders Pipe Cutters

No. 1	$ 1.80	net
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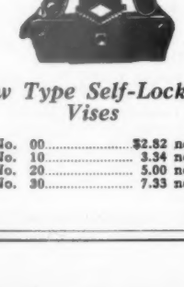

New Type Self-Locking Vises

No. 00	$2.82	net
No. 10	3.34	net
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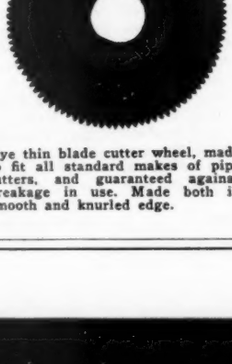

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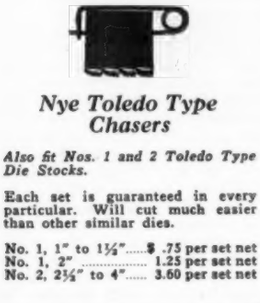

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Also fit Nos. 1 and 2 Toledo Type Die Stocks.

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½"	$ .75	per set net
No. 1, 2"	1.25	per set net
No. 2, 2½" to 4"	3.60	per set net

Section 2-16-15, flowing 90 bbls. at 2,593 feet.

Stephens Field

The Buffalo Oil Co. completed No. 3 Morgan, Section 22-15-19, flowing 300 bbls. at 1,542 feet.

Caddo Parish

In the Hosston district, the Dixie Oil Co. got salt water at 1,190 feet in No. 5 Hoss, Section 24-22-15, and the well was abandoned.

In the Pine Island district, O'Dell & Lawton completed No. 2 Red Bayou, Section 15-21-15, making 150 bbls. at 1,690 feet.

LaSalle Parish

In the Urania district, another well was added to the producers in this field, O'Dell & Lawson's No. 1 Tremont, Section 30-10-2, making 75 bbls. at 1,575 feet.

Columbia County

The Natural Gas & Petroleum Co. tested dry at 3,263 feet in a test on the Hays lease in Section 30-19-18, and the test was abandoned.

Nevada County

Brewer and others got a dry hole at 2,500 feet in No. 1 Lester & Holton, Section 22-14-20, and the test was abandoned.

Union County Drilling

Anderson and others set 10-inch at 286 feet in No. 2 Murphy, Section 15-16-15; Arkansas Drilling Co. drilling No. 2 Turnage, Section 34-15-16, at 1,350 feet; Broderick & Calvert drilling No. 4 Bradford, Section 8-16-15, at 2,560 feet, and Sam Cook set 10-inch at 140 feet in No. 7 Tatum, and drilling at 200 feet in No. 8, Section 7-16-15.

Crawford & Sebastian set 6-inch at 2,545 feet in No. 10 James, Section 8-16-15; Crown Central Petroleum Co. drilling No. 7 Murphy, Section 8-16-15, at 1,300 feet; Rowe-Daniels set 6-inch at 2,555 feet in No. A-1 Tatum, Section 7-16-15, and Ferguson Drilling Co. tested dry at 2,640 feet in No. 1 Howard, Section 7-16-16, and has 300 feet of oil in the hole and arranging to pump at 2,647 feet.

Grimes & Jones have 600 feet of oil in 12 feet of sand in No. 1 J. A. Rowland, Section 5-18-14, and is arranging to pump at 2,205 feet a test located 4 miles east and a little south of El Dorado.

Gulf Refining Co. has taken over Crawford & Sebastian's No. 8 Graves, Section 3-16-15, to deepen from 2,538 feet, and has set 4½-inch casing at 2,577 feet; setting 6-inch at 2,577 feet in No. 5 Primm, Section 1-16-16, and at 2,240 feet in No. 44 Werner, Section 6-16-16, and has derrick up for No. 45 same section. Harrell, trustee, has set 6-inch at 2,280 feet in No. 1 Carroll, Section 7-16-16, and Hollifield and others at 2,555 feet in No. 3-A Giller, Section 10-16-15.

Howell & Knowles are drilling No. 1 Springer, Section 36-17-16, at 1,555 feet; Humble Oil & Refining Co. drilling No. 5 Giller, Section 15-16-15, at 2,000 feet, and E. M. Jones drilling No. 5 Cook, Section 16-16-15, at 2,010 feet; rigging up to drill No. 1 J. R. Dumas, Section 8-17-16; has 1,700 feet of oil in 6 feet of sand in No. 2 Murphy, Section 17-16-15, and arranging to pump at 2,480 feet; set 6-inch at 2,675 feet in No. 1 Murphy and at 2,525 feet in No. 3, and drilling at 2,300 feet in No. 5, Section 17-16-15, and rigging up to drill No. 3 Lawton, Section 10-16-15.

Kampeter and others have set 12½-inch casing at 200 feet in No. 1 Townes, Section 34-19-11. Kennebrew and others' No. 1 Williams, Section 3-16-15, is pumping salt water at 2,555 feet; W. R. Keever drilling at 2,050 feet in No. 4 Sanford, Section 17-16-15; Liberty Oil Co. drilling No. 2 Davis, Section 31-16-14, at 2,162 feet, a test about half way between Norphlet and El Dorado.

Lion Oil & Refining Co. drilling No. C-4 Bilyew, Section 8-16-15, at 2,488 feet; setting 4½-inch at 2,558 feet in No. 9 Graves, and drilling at 1,350 feet in No. 10, Section 3-16-15; drilling at 2,490 feet in No. B-3 Lawton, Section 10-16-15; has 1,200 feet of oil in 20 feet of sand in No. A-12 Murphy, Section 7-16-15, and arranging to pump at 2,592 feet; drilling No. A-13, same section, at 1,850 feet, and drilling at 1,550 feet in No. C-10, Section 8-16-15, and rigging up to drill No. D-16, same section.

Little Fay Oil Co. has 1,500 feet of fluid in the hole in 7 feet of sand in No. 4 Harrell, Section 7-16-15, and is arranging to pump at 2,630 feet, and has set 10-inch at 385 feet in No. 5, same section; Magnolia Petroleum Co. rigging up to drill No. 3 Hatfield, Section 7-16-15, arranging to test 4 feet of broken sand at 2,260 feet in No. 3 N. J. Scott, Section 12-16-17, and set 10-inch at 210 feet in No. 2 R. O. Scott, same section.

Marine Oil Co. coring at 2,690 feet in No. B-5 Murphy, Section 15-16-15; Pat Marr arranging to abandon No. 1 Moody, Section 16-17-15, at 3,005 feet; Murdock and others rigging up to drill No. 7 Vestal, Section 17-16-15, and drilling at 300 feet in No. 8, same section; Natural Gas & Petroleum Co. drilling No. 5 Ballard, Section 15-16-15, at 2,400 feet, and No. B-5 Murphy, Section 17-16-15, at 2,595 feet.

Phillips Petroleum Co. tested 10,000,000 feet of gas and 3,000 bbls. of salt water at 2,579 feet in No. 5 Alphin, Section 11-16-15, and is drilling deeper at 2,618 feet; Penguin Oil Co. tested salt water and recemented casing at 2,572 feet in No. 6 McDonald, Section 1-16-15; Pure Oil Co. shut down on account of high water at 2,070 feet in No. 7 Meriwether, Section 6-16-15, and J. D. Reynolds is drilling at 1,500 feet in No. 1 Dumas, Section 15-17-16.

Russell and others bailing to test 1 foot of sand at 2,908 feet in No. 1 Brown, Section 8-17-14; Shreveport Oil Corp. is drilling at 50 feet in No. B-5 Murphy, Section 9-16-15; Southern Crude Oil Producing Co. coring at 2,635 feet in No. 3 Lawton, Section 7-16-15; Sure Oil Co. has 1,200 feet of oil in 4 feet of sand in No. 4 Murphy, Section 15-16-15, and arranging to pump at 2,464 feet, and Sun Oil Co. is drilling at 2,573 feet in No. 1 McClannahan, Section 1-16-16.

The Texas Co. is coring at 2,567 feet in No. 10 Alphin, Section 3-16-15, and arranging to pump No. 12, same section, standing with 1,000 feet of oil in 35 feet of sand at 2,555 feet, and drilling No. 1 McClanahan, Section 12-16-16, at 2,550 feet; Thurman and others coring at 2,555 feet in No. 9 Wilson, Section 6-16-15, and set 4½-inch casing at 2,395 feet in No. 1 Tatum, Section 7-16-15; Unity Petroleum Co. tested dry at 2,600 feet in No. 8 Bilyew, Section 8-16-15, and cemented back to test at 2,350 feet.

Bienville Parish

Hawks and others are drilling in red shale at 1,215 feet in No. 1 Calhoun, Section 15-19-7, 8 miles south of Homer and 5 miles north of Gibbsland.

Bossier Parish

Arkansas Fuel Oil Co. set 12-inch at 182 feet, drilling at 680 feet in No. 1 Murray, Section 14-23-14, 8 miles northwest of Plain Dealing.

Corbet and others have temporarily abandoned No. 1 Murff, Section 18-18-11, 6 miles northeast of Curtis.

Square Deal Oil Co. is arranging to set 6-inch at 1,210 feet in No. 1 Hall & Rumbough, Section 17-18-11, 2 miles northwest of Haughton.

Simms Oil Co. is drilling at 5 feet in No. 1 C. D. Sandidge, Section 9-18-11, 2 miles north of Haughton.

Bellevue Field

In the Bellevue Field, Olmsted and others are setting 6-inch at 300 feet in No. 10 Strange, Section 23-19-11.

Caddo Parish

In Hosston district, Dixie Oil Co. is drilling at 3,585 feet in No. 1 Jolly, Section 27-22-15; Austin Oil Co. set and cemented 6-inch at 1,019 feet, waiting for standard rig to pump at 1,029 feet in No. 22 Peak, Section 23-22-15; Henderson and others are drilling at 1,856 feet in No. 1 Caldwell, Section 29-22-15; Shamut Petroleum Co. set and cemented 10-inch at 47 feet, 6-inch at 980 feet in No. 3 Old, now No. 2 Jolly, Section 22-22-15.

In the Pine Island district, Dixie Oil Co. is drilling at 2,620 feet in No. B-2 Noel, Section 13-21-15; cemented 8-inch at 1,460 feet, bailing to test at 1,723 feet in No. 70 Robertshaw, same section; has made location for No. 7 Fitzsimmons Drilling Co., Section 14-21-15; Fortuna Oil Co. is pumping salt water, show little oil at 1,620 feet in No. 20 Raines, Section 22-21-15; set and cemented 6-inch at 1,475 feet in No. A-7 Hampton, Section 15-21-15; tested 2 bbls. per day at 2,275 feet, drilling at 2,278 feet in No. 1 Spell, Section 29-21-15; Odell & Lawton set 10-inch at 157 feet, drilling at 400 feet in No. 6 Huckaby, Section 15-21-15; drilling in hard lime at 3,033 feet in No. 1 J. B. Ardis, Section 1-21-15; drilling in lime at 3,216 feet in No. 18 E. K. Smith, Section 12-21-15, the last two wells being drilled by the Ohio Oil Co.; Page & Caldwell have shut down and are repairing rig at 1,200 feet in No. 1 Hobbs, Section 29-21-15; T. Schroeder set 10-inch at 80 feet, drilling at 1,200 feet in No. 1 Lane and others, Section 15-21-15; The Texas Co. has 75 feet of oil in hole, waiting for standard rig to pump at 1,701 feet in No. 9 Mabry, Section 13-21-15; set and cemented 5-inch at 1,380 feet in No. 6 Herold, Section 14-21-15.

In the Oil City district, Bratcher and others have a flow of salt water in 1 foot of sand at 1,896 feet in No. 1 Files, Section 10-20-16; Gulf Refining Co. set and cemented 6-inch at 2,040 feet in No. 223 Ferry Lake, Section 16-20-16; set and cemented 10-inch at 172 feet, drilling at 300 feet in No. 224 Ferry Lake, Section 20-20-16; D. C. Richardson tested dry, no show, going deeper at 2,131 feet in No. 1 Youree & Randolph, Section 13-20-15.

The Standard Oil Co. is drilling in gumbo at 2,172 feet in No. 175 Stiles, Section 27-21-16, in the old Caddo Field.

W. J. Staniffer is drilling in rock at 480 feet in No. 1 Starcke, Section 17-23-16, 2 miles northwest of Rodessa.

Claiborne Parish

Clark & Melat are tearing down rig to abandon in salt water at 2,160 feet No. 1 Heard, Section 5-21-6, 4 miles northwest of Homer.

J. P. Evans and others shut down for Christmas in shale and boulders at 1,100 feet in No. 1 Mrs. P. L. Boatner, Section 10-19-5, 7 miles north and a little east of Arcadia.

Triangle Drilling Co. is arranging to abandon in Nacatoch sand and soft chalk No. 1 Baker, Section 13-19-6, at 2,019 feet, 12 miles south and a little east of Homer.

DeSoto Parish

In the old Naborton Field, the Dixie Oil Co. is drilling in lime at 3,248 feet in No. 1 Jenkins, Section 9-12-11, and The Texas Co. cemented 6-inch, bailed dry, building standard rig at 2,402 feet in No. A-9 Wample, Section 9-12-11.

Five miles east of Logansport, the Fortuna Oil Co. is drilling at 4,161 feet in No. 1 Alexandria, Section 32-12-15.

Gulf Refining Co. is drilling in granite at 5,740 feet in No. C-18 Willis-Williams, Section 31-13-11, 2 miles south of Bayou Pierre Lake.

LaSalle Parish

Alexandria Urania Oil Co. set 10-inch at 41 feet, drilling at 1,300 feet in No. 2 Urania, Section 19-10-2e, 1 mile south of Urania.

Ayers and others are drilling at 1,420 feet in No. 2 Urania, Section 13-10-1e, 2 miles west of Urania.

One mile east of Tullos, Beckman and others are setting 6-inch at 1,518 feet in No. 3 Urania, Section 25-10-1e.

Dixie Oil Co. is drilling in sandy shale at 1,600 feet in No. 1 Urania, Section 24-10-1e, 8 miles west of Jena.

Dowling & McMurray tested salt water and are waiting orders at 1,600 feet in No. 1 Holloway, Section 28-11-2e, 4 miles north of Urania and 2 miles west of Olla.

Keene & Woolf Oil Co. set 12-inch at 62 feet, drilling at 780 feet in No. 2 Urania, Section 19-10-2e, 1 mile northeast of Tullos.

Sam Hunter tested fresh water, waiting orders at 957 feet in No. 1 Louisiana Central Lumber Co., Section 27-10-2e, 4 miles southeast of discovery well.

Louisiana Oil & Refining Co. is drilling in sandy shale at 1,302 feet in No. 2 Tremont, Section 29-10-2e, 3 miles east of Tullos.

Natural Gas & Petroleum Co. cored oil

(Continued on Page 160)

New Mexico Field Operations

By Special Correspondent

ARTESIA, N. Mex., Dec. 26.—Hoping to increase production the Ohio Oil Co. has pulled tubing and is drilling No. 6 well deeper on the Toomie Allen lease in the SE of Section 28-18-28. Put on the pump the well, for a three-day test, ran 118 bbls. the first day and 45 bbls. for the second and a like amount for the third day. As this is coming from a hard gray lime which has not been shot, the pumping test means little. The Ohio Co. intends to take the well down to 3,000 feet and then shoot it in the numerous streaks of sandy lime that have been encountered below 2,710 feet.

To the west of the Toomie-Allen the Twin Lakes Oil Co. is drilling No. 6 to 2,900 feet, the hole now being 2,625 feet and standing 1,600 feet in fluid. In the opinion of many operators the best pay will be found in the neighborhood of 3,200 feet and numerous tests will probably be carried to that depth.

From the upper pay sand, several new completions were reported for the week, the best of these being the Frontier Petroleum Co.'s No. 5 on the McQuigg Brothers lease in Section 4-18-28. Flowing wild for several hours while the crew waited for a casing nipple, the well wasted over 300 bbls. of oil. When turned into the tanks it flowed 125 bbls. naturally in seven hours and is considered the largest completion in the north extension.

Flynn, Welch & Yates have a good producer in No. 31 which was making 350 bbls. flush before catching fire and destroying the rig. It is expected it will be good for 150 bbls. when put on production.

Half-Mile Extension

In Section 3-18-28 Levers & Carper have a nice well in No. 1 which was shot with 220 quarts from 2,327 to 2,427 feet. This is a half-mile extension to what is now considered the proven territory.

In Section 18-18-28 George Bobb has completed another shallow well in his No. 3 which picked up a sand at 604 feet. This is the fourth shallow producer to be completed on the Thompson permit.

In Section 33-17-30, No. 1 Beeson has a gas blowout similar to the Irvin well, throwing sand and rocks several hundred feet in the air when the pocket was drilled into at 895 feet.

The new freight rate on crude oil shipment from Artesia and Dayton will go into effect December 31, this being in the form of an emergency.

Work of construction on the Phillips Petroleum Co.'s casinghead plant will be started immediately after the first of the year, material now being en route.

The New Mexico Pipe Line Co. has also started running crude through its 2,000-bbl. refinery located in this city.

Drilling Report—Artesia

George Bobb's No. 3 on the Thompson permit, Section 18-17-28, drilled in at 604 feet; Beeson No. 1, in the SE cor. of Section 33-17-30, drilling below 1,000 feet; Cheesman, Ballard & Clark's No. 1 Massey permit in Section 21-18-29, straight reaming at 2,400 feet; Colorado Drilling Co.'s No. 1 Irvin, SE SE, Section 8-16-27, preparing to set casing Monday; Cook-Ironsides and others, Section 10-20-29, shut down preparing for deep test; Compton No. 1, Section 16-18-28, drilling at 3,000 feet; Danciger Oil & Refining Co.'s No. 1 Daugherty, SE NW, Section 4-18-28, on production; Danciger

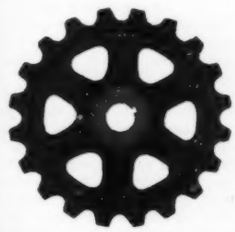
(Continued on Page 164)

Taking the Stretch Out of Oil Well Chain

REX Genuine Chabelco 1240 —the original notched-out oil well chain.

At left: strand of REX *genuine Chabelco 1030.*

Rex Safety Set Collar made of Certified Malleable Iron. Though stronger and more durable, it weighs only about half as much as a cast iron collar. Typical of the complete Rex transmission line.



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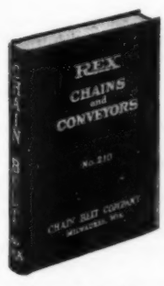

The Chain Belt No. 210 Catalog and Engineering Data Book shown above consists of 512 pages. It lists in detail all information for the ordering and use of Rex Chain, Conveyors and Transmission Machinery.

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Bushings and pins are forced into and locked in both side bars. No play around the holes. The wear will come between bushing and pin only.

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Gulf Coast Oil Operations

By P. L. McGreal

The Texas Co. well on Boling Dome, Wharton County, now flowing around 1,700 bbls. Humble Co.'s Piedras Pintas oil is 42 Baume. Gulf Production Co. gets 1,000-bbl. producer in Big Creek Pool when deepened. Houston Co.'s No. 8 Barngrover flowing 300 bbls. in Hull Pool.

HOUSTON, Tex., Dec. 28.—The Texas Co.'s No. 3 Taylor on the southwest side of the Boling uplift, in the southeastern part of Wharton County, which came in last week rated at from 8,000 to 10,000 bbls. at 3,338 feet and was shut in to 400 bbls. per day, is now flowing around 1,700 bbls. The tankage is still inadequate to open the well full flow. It is flowing through a ⅝-inch choke. The company is shipping out an average of 7 tank cars per day from Parkdale siding on the railroad, where a loading rack was erected about 1 mile south of the well. The tank cars average 250 bbls. The Atlantic Oil Producing Co. is moving in material for two tests on its 20-acre lease, about 400 feet northwest of the well. The Texas Co. has made locations to the west and southwest, just off the dome. The Sun Oil and Sinclair Oil & Gas Co. have a 55-acre block to the northwest and The Texas Co.'s holdings swing around to the west, southwest and south, comprising a total of 700 acres.

Geophysical Tests

The use of the seismograph and torsional balance is still quite active in the Coastal area, which is estimated at approximately 62,000,000 acres. More than 50 per cent of this area has been explored during the past three years. One of the major companies alone explored over 2,500,000 acres, which has been surrendered to the owners. Other of the large corporations have explored acreage in proportion. To date the list of saline uplifts determined by the geophysical methods are: Fannette in Jefferson County; Nash and Allen in Brazoria; Orchard and Long Point in Fort Bend; Hawkins in Matagorda; around Winnie and Stowell in Chambers; south of Stark, Calcasieu Parish in south Louisiana.

Locations still being tested out by drilling are: East of Green's Bayou in Harris County; northeast of Devers, Liberty County, and west of the South Liberty Pool; south of Old Ocean, Brazoria County, and 12 miles west of Boling Dome.

In addition there are many tests drilling on "dope," geological and otherwise, independent of the seismograph or the torsional balance methods of locating saline uplifts, or domes.

The Humble Oil & Refining Co. is doing exploration work along the northern line of Orange County around Hartburg, Deweyville and Rutliff. Many formation tests have been drilled in northern Orange and the southern parts of Newton and Jasper Counties.

The gravity test of the Humble Co.'s Piedras Pintas well registers 42 Baume. The oil is being shipped to the company's terminals at Texas City in tank cars. The output increased to 1,500 bbls. through a ⅜-inch choke. When production justifies it, a pipe line will be laid to deep water at Aransas Pass, near Corpus Christi, about 65 miles distant.

Estimated Daily Average Production

The estimated daily average gross production in the Coastal pools for the week ending December 26 is placed at 93,030 bbls., an increase of only 15 bbls. compared with the previous 7-day period, despite the increase from the Boling Dome and the new well in the Piedras Pintas Pool in Duval County. The largest decrease is in the Orange Pool, which offset the increase in the two mentioned.

The following is the estimate for each district:

District—	Gross Barrels
Boling	2,600
Batson	1,310
Blue Ridge	475
Barber Hill	100
Big Creek	980
Dayton	200
Damon Mound	1,075
Edgerly (La.)	420
Goose Creek	9,310
Humble	4,825
Hull	15,760
High Island	135
Jennings, (La.)	1,340
Lockport, (La.)	3,500
Markham	75
Orange	14,150
Pierce Junction	1,925
Spindletop	1,020
Saratoga	1,590
Sour Lake	4,175
South Liberty	16,125
Vinton, (La.)	6,600
West Columbia	10,100
Welsh-Anse La Bute, (La.)	80
*Miscellaneous	1,160
Total	93,030

*Includes 1,000 bbls. at Piedras Pintas.

Southwest Fields

The estimated daily average gross for the Southwest Fields is placed at 40,540 bbls. for the week, against 40,355 bbls. last week. The estimate for each field is as follows:

Field—	Gross Barrels
Luling	21,500
Laredo	3,520
Somerset	2,300
Calliham	220
Rockdale-Minerva	1,015
Jim Hogg County	3,375
Lockhart	8,610
Total	40,540
Total for the week	133,570
Total last week	133,340
Net decrease	230

Other Wells Completed

Aside from the news from Boling and Piedras Pintas it has been a dull week in the Coastal region, with but few completions of moment. Late in the week, the Gulf Production Co.'s No. 18 Davis in the Big Creek Pool in Fort Bend County deepened to 3,500 feet, came in flowing 1,000 bbls. The completion is too late to be included in this week's production report.

In the Batson Pool, the Sun Oil Co.'s No. 75 Hooks bailed dry at 1,350 feet. The Paraffine Oil Co.'s No. 62 Paraffine was a salt water hole at 1,130 feet. The Peer Oil Co.'s No. 1 Christian is bailing at 3,160 feet with screen set in shale and sand. The Kerby Petroleum-Capital Oil Co.'s No. 3 Hodges is bailing at 3,185 feet. It is a worked over well on the north side. The Peer Oil Co.'s test is also on the north side.

In the Sour Lake Pool, the Humble Oil & Refining Co.'s No. 19 Bashara is pumping 5 bbls. at 3,605 feet. At Spindletop, the Gulf Production Co.'s No. 218 Gladys is pumping 50 bbls. at 1,325 feet. Weber King's No. 1 Henderson is a 15-bbl. well at 750 feet. The Stella Oil Co. abandoned No. 7 Keith-Ward at 1,325 feet.

At High Island, Galveston County, the Transbay Oil Co.'s No. 1 Tiernan was abandoned at 200 feet. The Kirby Petroleum Co.-Kirk Hamill joint No. 1 Lipper on the north side of the Humble Pool is making 25 bbls. and much gas around 2,900 feet. Gas blowing from F. M. Long's No. 6 Hirsch ignited while a core was being taken. The derrick was destroyed.

In the West Columbia Pool, the Hdye Production Co. abandoned No. 1 Lee. The Humble Oil & Refining Co.'s No. 1-B Wilson is pumping 75 bbls. at 3,940 feet and its No. 1 M. and W. is bailing at 4,150 feet. Both are on the northwest flank of the dome.

In the Goose Creek Pool, the Gulf Production Co.'s No. 30 Beaumont Petroleum sublease in the bay is pumping 75 bbls. at 2,725 feet. The Humble Oil & Refining Co. is bailing Nos. 12-A Smith and 29 Galliard peninsula at 2,510 and 2,900 feet respectively.

Only one well was finished in the Orange Pool and it is practically a salt water hole. It is the Tillery Oil Co.'s No. 2 State land in Cow Bayou, pumping 150 bbls., 90 per cent sediment and water, at 4,650 feet.

In the Hull Pool, the Houston Production Co.'s No. 8 Barngrover is flowing 300 bbls. by heads at 3,175 feet. The Empire Gas & Fuel Co.'s No. 17 Barngrover is bailing at 3,061 feet.

In the Jennings Pool, The Texas Co.'s No. 58 Latrielle will pump at 1,910 feet.

The Houston-Gulf Gas Co.'s No. 1 Breeding in the Refugio County gas district is rated as a 50,000,000-foot gasser. No. 1 Rydals is drilling in. The same company has a 60,000,000-foot gasser in No. 1 Garcia in the Laredo district.

Drilling in the Pools

In the Batson Pool, The Texas Co.'s No. 1 Lajarza is drilling around 3,575 feet. The Deutser Oil Co.'s No. 14 is drilling around 762 feet. The Acorn Oil Co.'s No. 58 Paraffine is drilling around 460 feet. S. R. Buchanan's No. 86 Milhome is rigging up. The East Batson Oil Co.'s No. 11 State land is drilling around 915 feet. The Sun Oil Co.'s No. 75 Hooks tested dry at 1,350 feet. The Gulf Production Co.'s No. 1 Smith is drilling at 3,075 feet.

The Vacuum Oil Co.'s No. 2 Teel at Saratago is drilling around 3,562 feet. Paggi & Co.'s No. 18 Lewis is drilling around 1,375 feet. The Rio Bravo Oil Co.'s No. 3 B. and R., a work over, is drilling around 2,850 feet.

The Humble Oil & Refining Co.'s wildcat No. 1 Welder, across the river from the South Liberty Field, is drilling around 3,065 feet. In the South Liberty Field the East Texas Oil Co.'s No. 1 Lecourse is drilling around 1,800 feet. The Gulf Production Co.'s No. 5 Antoine is drilling around 3,424 feet.

The Gulf Production Co.'s No. 13 Bassett Blakely "C" at Blue Ridge is drilling around 1,820 feet.

The Gulf Production Co.'s No. 26 Davis at Big Creek is drilling around 3,375 feet.

Pierce Junction

The Rio Bravo Oil Co.'s No. 2 Settegast "P" at Pierce Junction is drilling around 2,150 feet; No. 2 P. and F. is a location. H. R. Cullen's No. 6 Howe is fishing. The Navarro Oil Co.'s No. 1 Cain is rigging up. The Gulf Production Co.'s No. 15 Taylor, a work over, is drilling around 2,600 feet.

At High Island, in Galveston County, the Sun Oil Co.'s No. 8 Cade is drilling around 3,530 feet; No. 6 is fishing at 3,320 feet; No. 6 Cade "C" is drilling around 2,335 feet. The Island Oil Co.'s No. 1 McCarthy is shut down at 2,260 feet. The Gulf Production Co.'s No. 3 George E. Smith will pump at 3,050 feet; No. 4 is drilling at 3,225 feet; No. 1 Smith "A" is building derrick.

At Orange the Brownie-Babbitte Oil Co.'s No. 6 McLain is drilling around 3,335 feet. The Continental Oil Co.'s No. 1 Chesson is drilling around 4,600 feet; No. 7 is shut down at 3,015 feet; No. 10 is fishing at 3,500 feet. The Edgerly Petroleum Co.'s No. 1 B. Carbello is drilling around 3,500 feet. The Humble Oil & Refining Co.'s No. 25 Chesson "B" is drilling around 2,500 feet; No. 24 is drilling around 4,650

(Continued from Page 164)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Dec. 26.—Some 12 wells were finished in Mexican fields during the week just ended, with 3 finishing in the pay; and as a result, new production can be placed at 3,150 bbls. All of the pay completions were in the northern fields.

The best well was Vera Cruz Mexican Oil Co.'s No. 7 Buena Vista, Panuco Field, which, at 2,000 feet, is rated good for 2,700 bbls. This well was drilled by Roy Gifford, who has a substantial interest in it. In the Tanchicuin, on the western edge of the Panuco Field, International Petroleum Co.'s No. 22 can strip for, say, 250 bbls. at 2,255 feet. In the Robles, in the heart of the old Panuco Field, Tampascos Oil Co.'s (Doherty interests) is good for 200 bbls. at 1,932 feet.

The failures follow: La Corona Petroleum Co.'s No. 102 Delicias, in the Panuco Field came in with a head of oil but developed salt water at 2,015 feet. Mexican Sinclair Petroleum Corp.'s No. 13 Gutierrez is a dry hole at 2,000 feet. Sol Oil Co.'s No. 7 Tamusol drilled into salt water at 2,297 feet. In the Cacalilao, International Petroleum Co.'s Nos. 239 and 251, Lot 5, are both dusters at 2,500 and 2,250 feet, respectively. Up in El Naranjo, west of Elbano, International's No. 8 is a dry hole at 2,500 feet. In Los Esteros, American International Fuel Co.'s No. 20 is finished a dry hole at 2,000 feet. In Ebano, Mexican Petroleum Co.'s No. 40 Chijol finished a dry hole around 2,500 feet.

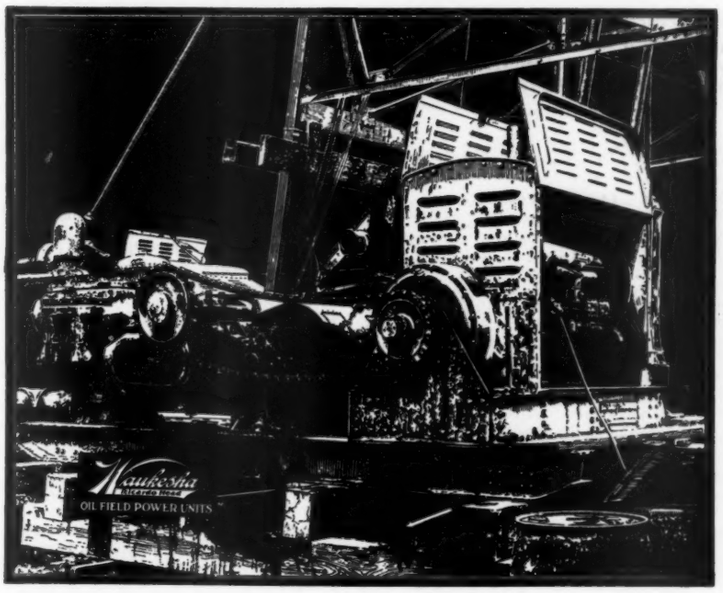
In the south fields, Mexican Eagle Oil Co., has abandoned its No. 48, Lot 134 Chinampa at 1,802 feet.

Panuco

Operations in the Panuco Field during the past week follow: Chileno Mexicana's No. 7 Tampuche is drilling at over 2,000 feet in limestone. LaCorona Petroleum Co.'s No. 106 Piedras is drilling in gray lime and shale at 2,140 feet; its No. 108 cemented 6-inch in gray lime at 1,275 feet. East Coast Oil Co.'s No. 47 Laguna de la Milpa is in white lime at 1,965 feet; its No. 451 Ingenio cemented 8-inch in shells at 1,220 feet; its No. 223 Halcon is in gray shale at 850 feet. Martin Head's No. 3-A Piedras is running 8-inch at 1,260 feet in shells, and will probably set around 1,350 feet. Intermex Oil Co.'s No. 2 Tampuche is in gray shale around 1,100 feet; and its No. 3 cemented 8-inch in lime and shale at 1,610 feet. Its Mex Oil Co.'s No. 16 Tampuche is drilling in shale at 1,100 feet. International Petroleum Co.'s No. 23 Tanchicuin is running 8-inch in gray lime at 1,350 feet. Mexican Sinclair Petroleum Corp.'s No. 13 Tananturo is in shale at 685 feet; its No. 17 is rigging its No. 6, Lot 1, Camolote, is in lime shells at 1,920 feet; its No. 7, same, is in blue shale at 840 feet; its No. 15 Gutierrez is in shale at 165 feet, and it has two tests rigging. Mexican Gulf Oil

(Continued on Page 162)

100 H. P. Waukesha Power Unit Driving an "Oilwell" Imperial "Mud Hog" Pump.



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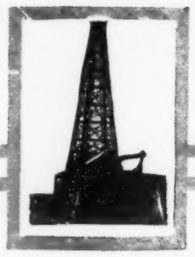


Southwest Texas Fields

By Special Correspondent

Piedras Pintas well of Humble Co. first oil production in Duval County outside shallow wells, although it has been wildcat center for 25 years. New structure in Caldwell and Bastrop Counties south of Lytton Springs Field. Renewed drilling in Gonzales and Fayette Counties in prospect.

SAN ANTONIO, Tex., Dec. 28.—The all-important event of the past week in Southwest Texas was, of course, the bringing in of the Humble's No. 4 Walsh in Duval County, on the Piedras Pintas salt dome, just a little to the northeast of the little town of Noleda. Tests of the oil show the gravity is 42.3 at a temperature of 70 degrees. The sand was topped at 3,597 feet and the bottom of the hole is 3,623 feet and was still in sand. There is no water and no show of water. The well when it first came in was making at the rate of better than 1,000 bbls. a day through a three-eighths-inch choker. Later in the week this was removed and a Christmas tree put on and the well made 50 bbls. an hour through 4½-inch casing. The control valve was removed, due to a leak. With the 50 bbls. of oil per hour the well was making something like 15,000,000 to 20,000,000 feet of gas when the well was given unrestricted flow.

The little field of Piedras Pintas has been producing oil for years at shallow depth immediately to the west and a little south of the Humble's new salt dome gusher. The first oil was found there in 1901 by the Producers Oil Co. of Houston at a depth of 500 feet, and in 1906 the field was developed with several wells by the Mary Owens Oil Co. and was known as the Mary Owens Field.

Ennis & Walker got a well there around 375 feet that flowed 20,000 bbls. of heavy gravity oil before it quit. A peculiarity of this well is that when it ceased to flow it was impossible to pump it, the sand evidently having been drained dry. Smaller wells were found and these pumped, the output ranging from a few barrels per day to as high as 50 bbls. Ennis & Walker were old Pennsylvania operators who came south after the Spindletop boom.

The Humble Co. has drilled five wells in the immediate vicinity of the new gusher and has been working in the field for about five years or more. The Piedras Pintas salt dome is supposed to lie to the west of the shallow field and west also of the gusher. On the southwest side of the supposed location of the dome Empire Gas & Fuel Co. started a test in 1918 and finished it in 1920. Empire was two years in drilling it and spent around $200,000 on the test. In November, 1919, at 3,492 feet it had a showing of oil that created a great deal of excitement. Due to failure in getting a good cement set on the first job, it was necessary to pull all of the 5⅜-inch and reset, and it was February before the hole was drilled in and bailed. It got only a little oil and proved a failure. The well was known as the No. 1 Becker and was about 2 miles nearly due west of the Humble's No. 4 Walsh, which has just been brought in.

North and a little west of the new Humble well is the Palangano salt dome, around which even more wells have been drilled than around the Piedras Pintas salt dome. Humble has drilled nine wells around the Palangano salt dome on the Schallert and Singer leases. Empire drilled a well on what is believed to be the southeast point of it. Sinclair drilled a couple of tests and then pulled out and turned its stuff over to the National, which drilled two or three. Various independent interests have drilled all over that territory.

Changes Whole Theory

A third known saline uplift is called the Brooks Dome, south of Alice, Brooks County, and the fourth is located northwest of Rio Grande City in the border country of Starr. Considerable drilling has been done around all of them and some shallow sand oil developed. The success of the Humble Co. in finding a deep sand changes the whole theory concerning that line of Coastal territory, stretching along the Gulf Coast west from the Colorado River. Heretofore the four saline uplifts mentioned were classed as secondary gypsum. They differ in many respects from those saline uplifts in the old Coastal region. The surface indications differ, lumps of what in the older uplifts are called "paraffin dirt" being found on the prairies, evidently pushed up in the clays. The Humble Co.'s well means that all that vast territory down to the Rio Grande River will be geophysically explored and formation tests drilled, with a good prospect for more pools being found, around saline uplifts. Over on the south side of the Rio Grande River leasers are working between the river and the mountains to the south in Mexico, a distance of 30 miles, and also leasing down toward Tampico. The leases are for a period of 30 years at $1 per annum rental. The rental for two years is paid in advance. The two wildcat tests drilling in Mexico south of the river are both shut down at present.

Outside of the little shallow Piedras Pintas Field the Humble's new well is the first oil production in Duval County, though the county for the past 25 years has been a wildcat center and at times has been full of wildcat tests. Geologists are convinced there are many other salt domes in the county. Piedras Pintas is 70 miles back from the coast line at Kingsville. The town of Noleda is on the Texas Mexican Railroad and is reached either from Corpus Christi or Laredo. The Humble's well is 300 feet to the east of the railroad and in about the center of Survey No. 185. Benavides, a little to the southwest of Noleda, a distance of about 3 miles, is somewhat of a small town with limited accommodations. At Noleda, a townsite laid out many years ago, there is practically no town.

Benavides has been packed and jammed with oil men on a number of occasions during the past quarter of a century and it is again full. Reports are that the Humble has practically everything blocked, but this seems not to be entirely true. There is considerable acreage in the survey to the west not under lease. Humble has most, if not all, of Survey 185 and all of Survey 186 under lease there and off to the north has a considerable sized block of leases supposed to be on the Palangano salt dome.

New Structure

As high as $60 and $70 an acre, with a sixteenth overriding royalty, has been paid and as high as $100 an acre offered for leases along a new structure that major companies believe they have located and which they have practically completed in blocking in Caldwell and Bastrop Counties south of the Lytton Springs Field. A great deal of hopes and expectations are pinned on this structure to produce another Luling Field in the Edwards Lime.

The new territory blocked runs from the North & South's Callahan well in Caldwell County, which has been making a little oil daily from the Austin chalk, almost due northeast toward the town of Bastrop in Bastrop County, but not that far. The North & South's well is about 8 miles straight south from the west edge of the Lytton Springs or Lockhart Field. Gulf drilled a well 2 miles north of it on the Magee farm in the Dillard Cooper survey, completed recently, which topped the chalk at 2,208 feet and has been abandoned, but which when compared with the depth of chalk in the North & South and other wells seems to prove the structure more than ever and has caused somewhat of a scramble for acreage. Major companies started blocking that territory, however, a year or so ago and practically everything is gone.

The territory mapped and blocked and leased is practically an extension of a line through the Luling oil field, and while the territory surrounding it has been tested and shows dry holes, these abandoned tests have helped to find the new structure. There will undoubtedly be some new tests in this block during the coming year and the probability is that until several tests have been completed (unless the first is a producer) the territory will be one of the most closely scouted in Southwest Texas.

Fayette Escarpment

Subsurface geology as disclosed by the logs of various wells in Gonzales County will probably lead to renewed drilling activity in that county and on into Fayette County along the Fayette escarpment. Sun Oil Co. recently abandoned its No. 1 Nelson at 1,485 feet. The well is 1,600 feet north and slightly west from the No. 1 Nelson, drilled some years ago, which got a showing of oil and gas at 1,400 feet and hit the formation which furnished a showing of oil in the Nelson 85 feet lower. The Wald E. Scherle test on the Greer farm, 6 miles southwest, caught the formation high again, getting it at 1,377 feet, which is taken as indicating the existence of a fault line between the Scherle and Sun tests, and other logs seem to show an anticline that is thought to extend up through Gonzales and Fayette Counties, where there is considerable drilling, and, due to the additional information and evidence of the anticline, there will probably be more.

Karnes County

Earl B. Reynolds got considerable oil of 38 gravity at a depth of 3,059 feet, steel tape measure, in the No. 1 Butler in Karnes County, but has failed to make a well, due to failure of the casing to hold out the water. There is 2,639 feet of 6⅝-inch casing in the hole which at a test made at that depth failed to hold. A string of 5⅞-inch was set with a packer just below the 6⅝-inch and another just above the pay, but the water broke in and prevented making a well. He is now arranging to pull both strings of casing and will ream down and set 6⅝-inch to a seat just above the pay and then cement and make another test. Enough oil was got out to get samples and make tests and if a proper set can

(Continued on Page 162)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 26.—Naphtha shipments from the Royalite Oil Co.'s No. 4 naphtha well in the Turner Valley Field, southwest of Calgary, made a new record for November, following the connecting up of the pipe line to the Calgary refinery of Imperial Oil, Ltd. The exact amount of 73 gravity naphtha sent from the Royalite wells to the refinery during November was 568,585 imperial gallons, of which approximately 29,000 gallons came from the Royalite absorption plant, handling the wet gas output of Nos. 1 and 2. Net shipments from Royalite's No. 4 were therefore about 539,585 imperial gallons, or approximately 15,417 bbls. No. 4 was on the pipe line only for part of November, so that it is anticipated that December figures will show a further increased output.

Comparative figures of the Royalite's No. 4 naphtha shipments for the six months including November, after deducting the output of the other Royalite wells, are:

Month—	Bbls.
November	15,417
October	13,300
September	12,702
August	14,379
July	15,308
June	14,409

The apparent falling off in September and October was due to the fact that the naphtha was then being hauled in tank trucks from the field to Okotoks and the roads were impassable a large part of the time. The new 4-inch pipe line is now delivering the product direct to the Imperial Oil, Ltd., refinery at Calgary.

Turner Valley Field

In the Turner Valley Field, southwest of Calgary, considerable interest attaches to the new extension of Imperial Oil Ltd., activities through the entry of a new Imperial subsidiary, the Dalhousie Oil Co., Ltd., into the field. The name of Premier Oils, Ltd., was originally contemplated for the new subsidiary, but was found unacceptable. The Dalhousie Oil Co. has taken over and will develop the holdings of Southern Alberta Oils, Ltd., carrying on its operations independent of the Royalite Oil Co., which will continue to work in what is commonly known as the Dingman portion of the field. John McLeod, formerly connected with the Royalite Oil Co. and who has recently returned from Peru, will be in charge of the Dalhousie operations, which will include the deepening of one of the existing Southern Alberta group of wells, to be followed in the spring by the drilling of a new deep test. A start has been made on the Alberta Southern No. 1, which will now be known as the Dalhousie No. 3. This well, originally drilled about 1915-16, was carried to around 3,000 feet, securing a small production of light oil. After necessary repairs to the rig, the Dalhousie No. 3 will be deepened, probably to the same horizon that was productive in Royalite No. 4.

Royalite Oil Co.'s No. 5, north of No. 4, is reported fishing at 2,525 feet. Royalite's No. 6 is at 2,277 feet and drilling. In Vulcan Oils, Ltd.'s No. 1, the bit is down 3,335 feet with the casing down to the bottom of the hole. The formation is stringy through which oil from a higher level trickles down and causes a caving of loose rock, necessitating the carrying down of the casing right after the tools and making work decidedly slow. The drillers hope to soon shut

(Continued on Page 160)

And When Shipped by Steamer—

Horton Tanks reach their destination in good condition. Preparation of fabricated steel for foreign shipment has been a definite part of our business for ten years.

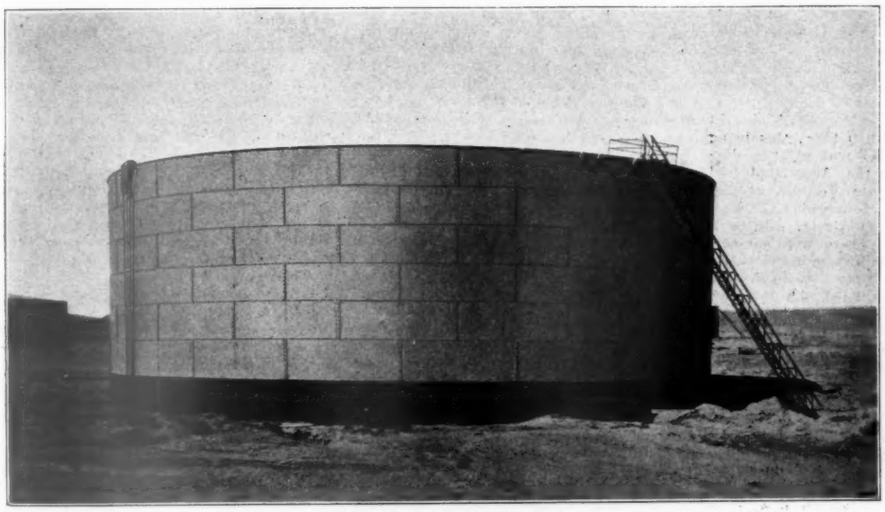
Our foreign shipments have been the subject of compliment from many of our customers. Our shop executives have visited ports to find out what kind of packing is most efficient.

We have followed our shipments through to destination. We have visited many countries to find out what the customer could give us in the way of constructive criticism and, of course, during all this time, we have continued the task of making Horton workmanship still better.

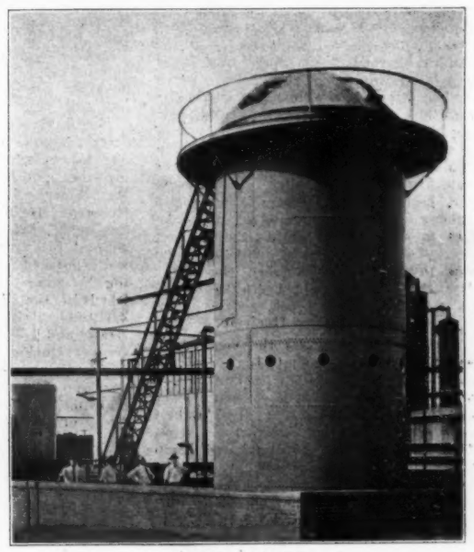
CHICAGO BRIDGE & IRON WORKS

Export office, NEW YORK, 3147 Hudson Terminal Building. In foreign countries, GARLICK & COMPANY, Jacob's Circle, Bombay, India; MURRAY & SCHARWENKA, Apartado 57, Maracaibo, Venezuela; HOUZE & ARMSTRONG, Apartado 422, Tampico, Tamps, Mexico; PARRISH & COMPANY, Apartado 6, Barranquilla, Colombia; CHICAGO BRIDGE & IRON WORKS, Apartado 2507, Habana, Cuba. In the United States, CHICAGO, 2128 Old Colony Building; CLEVELAND, 2204 Union Trust Building; DALLAS, 1641 Praetorian Building; SAN FRANCISCO, 1054 Rialto Building; ATLANTA, 1054 Healey Building.

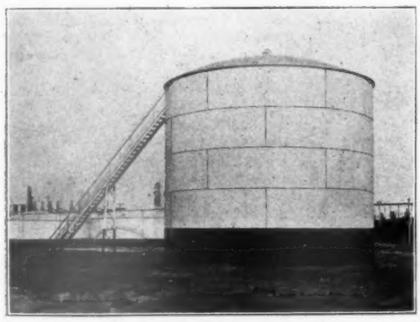
Elevated Hemispherical-bottom Tank at Pipe Line Pumping Station



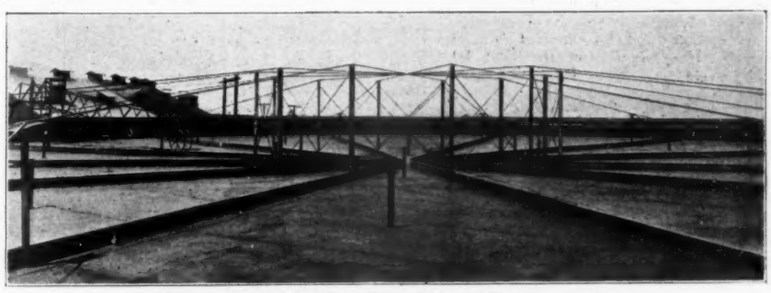
80,000-barrel Oil Storage Tank



500-barrel Agitator



Dome Roof Oil Storage Tank



Wiggins Floating Roof for Evaporation and Fire Prevention

A-28

HORTON TANKS

California Field Operations

By L. P. Stockman

Northwest extension of Long Beach most important activity, 105 wells drilling. J. E. O'Donnell's No. 46 makes 488 bbls., best of week. Barnsdall Oil Co.'s No. 7 O'Dea at Rosecrans makes 2,375 bbls. Pacific Co.'s No. 23 Baldwin 788 bbls., and Chanslor-Canfield-Midway's No. 86 Del Amo 546.

LOS ANGELES, Calif., Dec. 26.—Aside from the generally favorable economic condition in California and increased consumption of petroleum products in this area during the past few months, the only discernible improvement during that time seems to be the general downward tendency of the crude production curve as stocks are still piling up. The high point for this year was reached in August, the daily output during that 31-day period being 677,599 bbls. Production dropped the following month to 668,759 bbls. daily and declined still further in October to 645,648 bbls. During November another drop was recorded and, while this is highly gratifying, it is not believed that this rather heavy decline will continue indefinitely.

The peak for this year was due to development work at Inglewood and the decline since that time is attributable to a drop of 46,000 bbls. in that district and a further curtailment of production in several other fields. Of course, other areas fluctuated to some extent, but the declines of some were practically offset by similar increases elsewhere. Inglewood at present is yielding approximately 65,000 bbls. of crude daily and, barring the opening up and exploitation of a deeper horizon, should be good for a drop of around 20,000 bbls. during the next few months. Other fields, however, Long Beach, Ventura Avenue and Midway-Sunset, should offset this decline to some extent and, although production during December will be down even lower than November the curve after that time should begin to flatten out a little.

May be Deeper Horizon

While commenting on the decline expected to take place at Inglewood, it would not be amiss to call attention to the fact that there may be a deeper producing horizon in that area and it is quite possible that when the output of this field drops, operators will begin looking for this deeper sand. Of course, they may mutually agree to hold up this prospecting, but any action along this line is dependent upon developments in other areas.

While surveying conditions from a production standpoint, it is interesting to note that the Pan American (Western) has started construction work on additional storage facilities expected to take care of its needs during the next 90 days. This new work must either be based on an anticipated increase in production or a drop in consumption during the winter months. On the surface, it would seem that the company expects to store fuel oil and continue to ship gasoline, although crude could be stored in the new containers under construction if necessary. In any event, the company is sitting pretty and can take advantage of any emergency which should arise. The company's new work consists of several 80,000-bbl. steel tanks and two new concrete reservoirs at its Watson refinery. One of the latter, with a capacity of 3,000,000 bbls., should be ready for use within the next 30 days, while the other, located on a 40-acre tract near Lomita, is about 10 per cent completed. It will have a capacity upon completion of around 4,500,000 bbls. and the location indicates that it will be one of several if stocks continue to pile up. When the Pan American's present building program is completed storage facilities in the Wilmington sector will approximate 50,000,000 bbls.

Change In Production

The biggest change in production took place in the Midway-Sunset Field, Santa Maria, Ventura-Newhall, Long Beach and Inglewood districts. In the latter area the daily output declined from 80,468 bbls. in October to 70,621 bbls. in November and indications point to a still further decrease in December. This drop was due to the settling of flowing wells and in spite of the fact that seven new producers were completed during the month good for a daily initial output of 6,461 bbls. Production in this area has been hovering around 68,000 bbls. during the past three weeks and it is expected that the daily output during December will run around 66,000 bbls. The daily output of the Midway-Sunset area declined 4,031 bbls., dropping from 100,239 bbls. during October to 96,208 bbls. during November. This was due to a general settling throughout the field and the sanding up of two big flowing wells.

Santa Maria showed a net decline in daily production of 910 bbls., this being due to curtailment measures taken during the month by the Associated and Pan American. Santa Fe Springs and Rosecrans registered losses of 1,772 bbls. and 2,833 bbls., respectively, due to a general falling off. There were no new wells finished in the former district during November, but there were eight finished in the Rosecrans Field good for 2,010 bbls. daily. Ventura-Newhall, Long Beach and Elk Hills registered slight increases during the period in question. The gain shown by Long Beach reflects development work in the northwest extension, in which were located the majority of the 22 wells finished during the month. The increases in the Elk Hills and Ventura-Newhall areas were also due principally to new production added during the month. In the Ventura-Newhall section there were only two new wells finished, but there were, in addition, several recompletions in the Ventura Avenue Field, which came in with a heavy flow. Field developments since the first of December indicate that a further increase may be anticipated in this district due to the completion of three new wells and the return to production of several others which were redrilled and deepened. With the exception of the districts covered above, none showed any appreciable change.

Status of Development

Conditions throughout the State from a development standpoint were quite satisfactory and, although the number of new rigs erected in fields other than Long Beach was rather small, it indicates continued activity. Long Beach is credited with 43 new rigs, over one-third of the entire number erected during November, and will probably lead the field again during December. Although there was a decrease of nine in the total number of strings of tools in operation, there will be a substantial increase in the amount of drilling done during December, due chiefly to operations in the Long Beach extension and some additional work in the Ventura Avenue Field. It is quite interesting in checking over the number of producing wells to look back a few years and note the increase made during this period. This indicates very clearly the rapid strides made by the industry in California and gives some idea of the amount of money expended in new development work. During November there were 11,029 wells producing and about 1,950 more shut down due to necessary restrictive measures taken to curtail production. In addition to these two figures approximately 550 more wells were temporarily off production, some of which had sanded up while others were being redrilled and deepened. Back in 1920 the total number of wells, including both those on and off production, was slightly in excess of 10,000.

As has been the case for several months, stocks of heavy crude, fuel oil, light crude and gasoline held on the Pacific Coast increased during November, while naphtha distillates, tops, registered a decrease. Both light and heavy crude has been increasing for several months. The present storage of heavy crude and fuel oil, aggregating 82,149,489 bbls., is 24,894,693 bbls. in excess of the amount held on January 1, 1925, and represents a surplus of 861,940 bbls. during November. This class of oil is at present generally regarded as a burden, but may, in the near future, prove a big factor when cracking becomes general on the Pacific Coast. A total of 655,481 bbls. of light oil was added to stocks during November, bringing the amount on hand at the close of the month to 44,057,343 bbls. This is 3,482,765 bbls. larger than the amount held at the beginning of the year. The present stocks of gasoline, 10,015,112 bbls., is 942,375 bbls. less than that held in storage at the beginning of the year. A very substantial decline is noted in the amount of naphtha distillates held in storage, the present stock of 6,373,852 bbls. being 3,022,761 bbls. less than the amount held in storage at the beginning of the year and 4,084,415 bbls. below the storage on November 30, 1924. All other stocks, which consists of kerosene, lubricants, greases, asphalt, mineral oil, wax, etc., are down 2,926,474 bbls. The total fluid stocks held on hand November 30 was 152,360,730 bbls. as compared with 125,021,964 bbls. on hand January 1 of the current year.

Long Beach Field

The northwest extension of the Long Beach Field, west of Atlantic and north of Center Street, monopolized the spotlight during the past week, due to the large amount of development work being done and, although there were several big producers finished in other districts throughout the State, this field continued to be the center of attraction. The exact status of this extension, by the way, is somewhat of a debated question as it has not been definitely decided whether the extension is an entirely new structure or merely an extension of the old field. The latter theory is generally accepted, although there are some who hold that this new area is an entirely separate structure lying adjacent to the old field. The Marland and Shell companies were the first to test out the theory that another structure might exist northwest of Long Beach but their geological staffs did not believe it would be so close to the old area and, as a result, their respective tests were both off structure and dry.

George W. Johnston was of the opinion there should be an extension of the old field rather than a new field and several months ago he began acquiring considerable acreage in that area. The result is that he and his associates have accumulated some dandy leases in what now looks to be the heart of this new extension. Johnston started work as soon as the northwest extension was proven to be productive and he and his associates have at the present time one producing well flowing approximately 406 bbls. a day, three drillers and a rig going up for No. 5.

The United's second Bixby well was badly junked and, although No. 1 did actually produce oil, to the outsider it looked like an edge well because of the larger amount of water present. Recent developments have tended to indicate that this water was due to mechanical trouble and not to edgewater conditions, as was thought by those familiar with the actual status of the hole. That the United has also come to this conclusion is evidenced by the recent spudding in of No. 3 Bixby.

There are about 105 wells drilling in the northwest extension and, judging by their present status, they should begin coming into production in increasing numbers shortly after the first of the year. This development work will probably continue until well into the summer unless the productive limits should prove smaller than recent developments seem to indicate. Because of the rapid footage made and the minimum cost involved, this area should prove one of the most remunerative town lot sections opened up in the State. One of the fastest drilling jobs listed to date in the new extension was made on the Keck-McWhorter well, which was carried down to 4,210 feet

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Halo, December 14, Boston, crude	75,193
Paul Shoup, December 14, Baltimore, crude	76,081
Vacuum, December 14, New York, fuel	73,976
Agwilake, December 15, New York, fuel	84,895
Dixie Arrow, December 12, New York, fuel	88,755
Coastwise	
Los Angeles, December 14, Oleum, crude	75,864
K. R. Kingsbury, December 14, Seattle, fuel	83,483
Lebec, December 14, San Francisco, fuel	65,212
Los Alamos, December 14, Portland, refined	41,231
Frank H. Buck, December 14, Avon, crude	62,607
W. S. Miller, December 15, Richmond, crude	74,973
Mojave, December 15, Portland, fuel	70,218
Warwick, December 16, Oleum, refined	33,265
Deroche, December 16, Martinez, crude	72,044
Standard Service, December 17, San Diego, refined	12,737
M. H. Whittier, December 19, Avon, crude	76,510
Los Angeles, December 19, Martinez, crude	75,234
W. S. Miller, December 19, Richmond, crude	72,351
D. G. Scofield, December 20, Richmond, crude	75,024
Exports	
Swift Arrow, December 14, Balboa, fuel	76,883
Capsa (Br.), December 16, Balboa, fuel	57,468
San Salvador (Br.), December 16, London, refined	63,921
La Purisima, December 16, Honolulu, refined	33,910
Mina Brea (Br.), December 19, Vancouver, crude	40,246
From Port San Luis	
Montebello, December 16, Chile, fuel	72,486
From San Francisco	
Frank G. Drum, December 14, Portland, fuel	73,476
Alaska Standard, December 14, Coos Bay, refined	9,120
Atlantic Sun, December 14, Jacksonville, refined	76,502
Tacoma (Br.), December 14, China, refined	62,783
El Segundo, December 16, Portland, refined	31,095
Frank H. Buck, December 17, Linnton, fuel	62,471
J. A. Moffett, December 17, Powell River, fuel	60,142

The Long Stroke Wins

77½

Barrels Per Hour at 10 Strokes Per Minute

This is what the Farley Long Stroke Pump is doing for the Magnolia Petroleum Corporation and others. You can easily pump 1800 barrels per day through 4″ tubing at 10 strokes per minute or 2000 barrels per day through 5″, not only one day but every day. The Farley Long Stroke Pump is not an experiment. It is the first long stroke slow motion pump ever used in the Mid-Continent Field. The rugged construction of this outfit insures you continuous operation. There will be no expensive shut-downs for repairs or replacements. The first cost of the Farley Pump is a little more than other beam pumping outfits but THE MAINTENANCE COST IS PRACTICALLY ELIMINATED.

Think it over, Mr. Producer, 77½ barrels per hour at 10 strokes per minute.

IF YOUR WELL IS MAKING WATER THE MORE WATER YOU PUMP THE MORE OIL YOU WILL GET.

IF THE REVERSALS PART AND BREAK SUCKER RODS, THEN ISN'T 10 REVERSALS BETTER THAN 25 OR 30?

The Farley Machine Works Co.

Arkansas City, Kansas **Peabody, Kansas**

Won't the valve seats last longer in the traveling valves and standing valves operating 10 times a minute as against 25 or 30?

BUILT TO PUMP DEEP WELLS AND WELLS THAT MAKE A LOT OF FLUID.—THE FARLEY LONG STROKE PUMP.

in a little over 19 days. This is approximately 221 feet a day, an unusual average in any field.

A. J. Delaney carried off completion honors with two new wells to his credit, both of which were located in the northwest extension. These wells were Nos. 3 and 4, the former coming in doing 290 bbls. and the latter 435 bbls., the oil in each case testing 21.6 degrees and showing a cut of 3 per cent. No. 3 was drilled to 4,365 feet and finished with a 4¾-inch liner, while No. 4 was carried down to 4,483 feet and finished with a 4½-inch oil string. Delaney spudded in two new holes, Nos. 8 and 9, during the week and these, together with No. 5 at 3,650 feet, are going ahead nicely. No. 2, completed last week, developed water trouble and a cement plug has been put at 4,375 feet, 13 feet off bottom.

O'Donnell Well Largest

The largest well finished in this area during the week was J. E. O'Donnell's No. 46 Long Beach, which came in doing 488 bbls. of 21.8 gravity oil from 4,490 feet. O'Donnell's present development chart shows two drillers, Nos. 47 and 48, and rigs standing for Nos. 49 and 51. The Rainbow Petroleum finished its No. 4 Long Beach and, although the output is cutting approximately 30 per cent water, it may clean up after the well has been on production for a few days. At present, however, it looks as though the company will be obliged to do some more work on the hole and possibly recement, as it does not look as though an effective water shut off has been secured. The present test made from 4,525 feet showed 390 bbls. of fluid. Nathan Hale has just completed his first northwest extension well and incidentally increased the daily field production 346 bbls. Hale carried this well down to 4,532 feet and finished the hole with a 6¼-inch liner, 106 feet of which was shop perforated.

The Barry Oil Co.'s No. 1 Leavell, finished a week or ten days ago, showed an unusually heavy decline in production, the present daily output being only 231 bbls., a drop of over 50 per cent in less than two weeks. Two beams are being used on this hole, the orifices measuring ⅞-inch and ¾-inch, but it is believed one could be cut out to advantage. The California Petroleum has mapped out a rather heavy drilling program in the extension and will shortly begin work on four new holes, as the derricks are rapidly nearing completion. The Cerritos Petroleum Co. has taken over S. L. Johnston's well No. 1 at 2,600 feet and a rig of Doak & Dunlap, recently finished. Both holes will be carried to completion on a royalty basis.

J. B. Dabney and George F. Getty, both operating heretofore in the older sections of the field, have acquired drilling sites in the extension and will start two new wells soon. The W. R. Ramsey interests have transferred their lease, equipment and wells on municipally owned land in the older part of the field to the Rio Grande Oil Co., the transfer involving 15 producers and 2 drillers. It is believed Ramsey has divorced himself of this lease in order to be in a position to take over some additional city owned property in the extension, although this could not be definitely determined.

Rosecrans

The Barnsdall Oil Co. ushered in the holiday season by completing a big well on its O'Dea lease at Rosecrans and, judging by indications, will add another producer to its list in a day or two when a test is made of No. 7 Rosecrans, which looks quite promising at 4,523 feet. No. 7 O'Dea, the company's big well, came in doing 2,735 bbls. of clean 40.5 gravity oil and approximately 2,000,000 feet of wet gas. The hole was carried down to 4,666 feet and finished with an 8¼-inch oil string carrying 587 feet of 100-mesh screen. No. 7 O'Dea is in the central part of this lease and the output of this well, together with that of No. 6, which is still putting better than 1,000 bbls. a day into the tanks ten weeks after completion, gives some idea of the potentiality of this property. The Barnsdall has finished several unusually good producers in this area during the past several weeks and will undoubtedly augment its present daily production of approximately 9,000 bbls. quite substantially upon completion of its present drilling program.

The Julian Petroleum redrilled and deepened its No. 5 Athens to 5,250 feet and, although good production was obtained, the present output, 400 bbls. of clean 36.4 gravity oil, is considerably smaller than the initial output obtained in the upper sand. It originally came in doing around 1,500 bbls. a day but, as is customary with producers in the town lot section in the northern part of the field, fell down miserably a short time after completion. The Union is making quite an exhaustive test on No. 1 Zins and No. 1 Gordon, both deep tests, the former at 5,320 feet and the latter at 5,640 feet. No. 1 Zins has not yet developed anything of interest and, while No. 1 Gordon has shown up quite favorably, considerable difficulty is being experienced in securing a water shut off. On the Howard Park property, the company has several potential producers which should come into production shortly after the first of the year.

Inglewood

The day of the big wells in the present producing horizon at Inglewood is nearly over, although one can expect a big producer now and then. The Pacific brought in an exception and featured the week with a 788-bbl. flowing well on its Baldwin lease, the oil testing 21.4 degrees and showing a cut of 3 per cent. The company's new well was No. 23, plugged back from 2,177 feet and finished with an 8¼-inch oil string carrying 995 feet of 90-mesh screen. It is a second line offset, three locations north of the southern boundary of the lease and midway between Nos. 22 and 24, each of which is flowing. The Shell started work early this week erecting a steel rig for No. 15 Kindge in the eastern part of this lease and the Pacific immediately started rig construction for an offset to be designated as No. 19 Baldwin. It is expected both wells will get under way within two weeks.

The Standard spotted four new locations on Los Angeles Investment Lease No. 1 and one new site on its Stocker lease. The new wells, Nos. 38, 39, 40 and 41 on Los Angeles Investment Lease No. 1 are inside locations, while the projected work on the Stocker lease is in the western part of the property, one location north of No. 3, now making 302 bbls. per day. The Associated Co. has only one driller to its credit, No. 43 Vickers, as this lease is practically all drilled up. The Golden Flood Oil Co., operating outside the southern proven limits of the field, is down 2,858 feet and, since the hole has not shown any encouragement to date, it has been placed on the doubtful list as far as getting production above 3,000 feet is concerned.

Torrance

The Chanslor-Canfield Midway Oil Co. surprised the industry early this week by bringing in another big well on its Del Amo lease at Torrance, which in the main has been productive of comparatively small pumpers. The company's latest success was well No. 86, which came in doing 546 bbls. of 23.4 gravity oil and approximately 500,000 feet of rich gas from 3,425 feet. In contrast to this big production, No. 35 Del Amo went on the beam at 3,620 feet and is rated at 75 bbls. per day, the oil testing 21.2 degrees and showing a cut of 4 per cent. The California Petroleum has just about completed preparations to put No. 3 Craven on production and it will be bailed from 3,600 feet a little later this week.

The Julian Petroleum redrilled and deepened the Bolsa Chica Petroleum Corp.'s No. 1 at Huntington Beach from 3,120 feet to 3,856 feet and succeeded in returning it to production, doing 225 bbls. of clean 24.3 gravity oil. The Southern California Drilling Co. is experiencing considerable trouble in finishing No. 1 Granas, drilled to 3,150 feet, and due to mechanical trouble will be obliged to pull from 2,949 feet, from which depth it is good for around 20 bbls. a day. The Standard made good footage in practically all of its wells in this area and, although No. 1 Newland has been delayed for a week or so because of mechanical trouble, a recovery has just been effected and the bit is scheduled to resume its downward journey from 2,455 feet.

At Rideout Heights, the California Petroleum is erecting a steel rig on its Seward-Rideout property offsetting No. 1 Jesurum, a deep well of the Pan American, which is pumping 250 bbls. of dirty oil from 4,675 feet, and it is reported the company will take one more fling in an effort to pick up the deep sand. The Pan American has never been able to exclude water from this hole and it is quite possible another test will be drilled on the same lease early next year. The California Petroleum has for the past several months been devoting its attention toward developing production in the shallow zone, having come to the conclusion as the result of several deep dry holes that the lower zone is not commercially productive. There is practically no development work of any consequence being done in the Santa Fe Springs area, although there are at present three holes going down and good prospects for the starting of another by the General Petroleum.

Montebello

The Standard put its No. 64 Baldwin in the Montebello Field on a pumping test early this week from 3,685 feet but the outcome was rather disappointing, inasmuch as it is showing nearly 50 per cent water. Because of this rather unsatisfactory showing, the company will undoubtedly be obliged to resume work. No. 65 Baldwin, the company's latest spud in this area, is at 2,518 feet and going ahead slowly because of an unusually hard formation peculiar to this field. Neither the Superior nor Standard spudded in their projected new wells, No. 1 Manz and No. 16 Temple, as the rotary equipment to be used had not been completely rigged up, but they should get under way some time during the coming week. The St. Helens put No. 2 Mulholland on a production test after plugging back from 4,210 feet to 3,480 feet but the output, 100 bbls. of oil and a similar amount of water, indicates the plug has not been entirely successful. On the Monterey property the company is making satisfactory progress in both No. 10 at 3,480 feet and No. 11 at 2,000 feet.

In the Richfield district, the Union has decided to give up the attempt to produce from the lower zone in No. 1 Tuffree, drilled to 5,317 feet, and will try and finish the hole in the upper sands. The odds are against production, however, and it would not be surprising if a final abandonment notice was forthcoming shortly. The California Petroleum made a production test of No. 10 Richfield Consolidated but the output from 4,388 feet was practically all water and the company will plug back still farther. No. 18 Yarnell, the company's latest spud, is making fairly good progress at 1,352 feet. The Standard's development work at Richfield consists of one driller, No. 20 on Kraemer lease No. 2, and although progress is being held up because of mechanical trouble, drilling should be resumed shortly.

There were no new wells started in the Fullerton district this week and very little change is noted in the status of work already under way. The Union's two prospects on the Olinda lease are still held up with mechanical trouble, as is also the Chanslor-Canfield Midway Oil Co.'s No. 96 Olinda. The Birch, Brea Canyon, Fullerton and Shell Oil Companies all made additional footage. E. L. Blanton spudded in his No. 1 Gualdine at Coyote and the bit is just passing through surface formation. The Birch-Royer well, also in this area, is in a rather bad shape due to water trouble and, although the hole looked quite promising around 5,000 feet, considerable doubt exists as to whether the company will ever be able to secure clean oil.

Southern California Wildcats

Probably the most important wildcat

(Continued on Page 158)

Pennsylvania-West Virginia

By D. S. Wakenight

PITTSBURGH, Pa., Dec. 28.—Despite fine weather there were fewer completions than during the previous week. The deep sand territory in southeastern Ohio furnished most of the better than average wells. There is no rush of new work in any section and in some places operations have been suspended until after the first of the new year. The eastern fields have no territory that calls for immediate development and operators are glad to shut down during the holidays. It is the consensus of opinion that general conditions are now better than at any time in the past few years. The market is still too low for the eastern operator to drill for light pumpers and realize a profit. Such wells as they have been completing will take a long time to repay the money invested.

Field Developments

Located in Lot 8, Licking Township, Muskingum County, the Pure Oil Co. drilled its second test on the C. H. Wright farm through the Clinton sand. It is a natural producer and placed 150 bbls. to its credit the first 24 hours after drilled into the pay.

In Section 22, Adams Township, Guernsey County, Stoltz and others have drilled a test on the L. W. Unterzumber farm into the Niagara lime, to a total depth of 3,433 feet. It is a gasser, estimated good for 2,500,000 feet of gas. In Section 49, Salem Township, Washington County, the Peoples Banking & Trust Co. has drilled down from the 700-foot to the 800-foot sand and shot at both levels No. 3 on the S. L. Wharff farm. It is good for 15 bbls. a day.

Drilling Deep Tests

In Section 9, Knox Township, Guernsey County, the Ohio Fuel Gas Co. is drilling at 4,791 feet at its test on the Robert Nelson, Jr., farm. In Section 19, Adams Township, the same company is drilling at 850 feet on the C. M. Donley farm. The same company is drilling at 1,800 feet on the A. C. Dummafrank farm. In Knox Township, Keith and others are drilling at 500 feet on the Keith farm. In the same township, the Eastern Carbon Black Co. has drilled a test on the E. P. Miser farm to a total depth of 4,120 feet and shut down. The Pure Oil Co. has started to drill a test on the Elizabeth Irwin farm and the Logan Gas Co. is rigging up on the Edward R. Williams farm.

In the northwest corner, Section 28, Harrison Township, Perry County, the Pure Oil Co.'s test on the Conway heirs' farm, completed in the Clinton sand last week, has been shot in that formation and producing 25 bbls. a day. In the southwest quarter of Section 36, Jefferson Township, Noble County, Joseph Estadt and others have completed in the stray sand No. 5 on the D. W. Williams farm. It is not good for more than 2 bbls. a day.

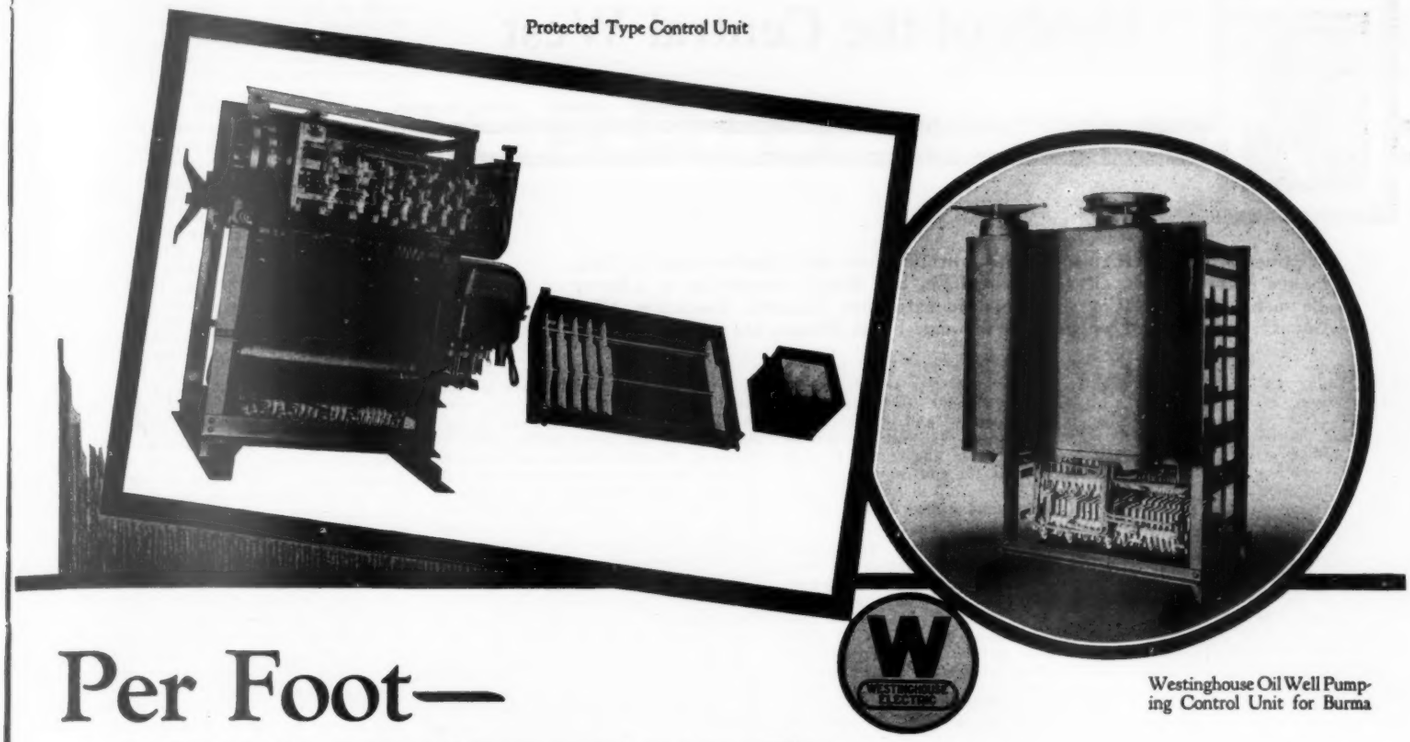
Meigs County

In the Berea grit development, Section 19, Sutton Township, Meigs County, the Pure Oil Co.'s No. 3 on the Krider heirs' farm is a 3-bbl. pumper. In the southwest quarter of the same township, R. G. Gillespie drilled deeper No. 3 on the Louisa Cross farm. About a year ago it was drilled in a gasser. With deeper drilling no oil was developed but it has an increased gas pressure good for 750,000 feet.

In the southwest quarter of Section 18, Enoch Township, Noble County, A. S. Rucker & Co. have drilled a second test on the John N. Boyde farm through

(Continued on Page 140)

Protected Type Control Unit



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"This well was chosen to try out this equipment because it was considered that the work was severe, due to pulling of wooden rods every three or four days. The equipment gave no trouble in any direction, all temperatures well within the limit. ***Maintenance is quickly and cheaply effected.***"

Concerning a fishing and drilling job in the same territory, the customer's report states: "No shutdowns were occasioned by the electrical equipment, it all the time running smoothly and giving good speed control and motion to the tools."

On another operation the customer's report concludes: "It is now almost 12 months since this equipment was put into operation. Its work has been constant and of a severe and varied nature. ***There has not been a repair or renewal made upon it during the whole of this time.*** The cam controller shows little wear of the contacts; beyond an application of file, that is all that has been necessary. The main switch is substantially sound and has worked satisfactorily without occasioning the least trouble."

Wherever your location, whatever your conditions, it will pay you to investigate the merits of Westinghouse Oil Well Drilling and Pumping Equipment.

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Fields of the Central West

By Whit

Wittmer property, trustee, well in Cynthian Township, Shelby County, Ohio, makes 62 bbls. flush. Base Line Oil Co. has 45-bbl. completion in Liberty Township, Hancock County. Leonard extension, Maumee Township, Allen County, Indiana, gets attention. Allendale Field, Illinois, has good producers.

FINDLAY, Ohio, Dec. 28.—Twenty-four completions were reported from the division of the Central West Field, north of the Ohio River, for the week, with 19 oil wells, with a flush of 420 bbls., and 5 dry holes, there being no gas wells reported. Operations are getting rather quiet at this time due to the holiday season, but, if talk is any criterion, much new work will be begun when the spring season comes. Better prices for crude are in sight and all predict a great year for the industry in 1926.

Lima Field

The best completion of the week in the Lima Field is the Wittmer Property, Trustee, and John Cashdollar's No. 3 on the Joseph Siegel, 3½ miles east of Fort Laramie, in Section 15, Cynthian Township, Shelby County. This well, 300 feet from the south line and 1,000 feet from the west line of the farm, showed 62 bbls. flush from a total depth of 1,353 feet, 41 feet in the Trenton Rock. Good showings were had in both the first and second screws, but the main pay was tapped at 22 feet in, where the well was given a 140-quart shot. The Siegel property is south of the old Lima Field proper which for many years was considered outside the Trenton Rock producing territory, or too light to furnish commercial production, and the bringing in of this well, as well as several others in the same vicinity has stimulated activity in this section, thought by many to be extremely light.

In the same township, Lee A. Watson has drilled in a wildcat well in the northeast corner of the E. Grillott farm, in the northwest quarter of Section 34, which produced 10 bbls., and means quite an extension to the producing area of the county.

In McDonel Township, Hardin County, the Boston-Southwestern Oil & Gas Co. drilled in its No. 3 on the southeast corner of the Mary Clark Irwin farms, which after a 160-quart shot filled up 900 feet with fluid and the first 24 hours pumped 20 bbls. Top of sand was found at 1,448 feet and drilled 42 feet in to a depth of 1,490 feet. This company has been a large operator in the Paintsville Field of Johnson and Magoffin Counties, Kentucky. E. E. White is president, and drilling of the Irwin farm was done by H. P. Manion of St. Marys, Ohio. The company is arranging to drill a wildcat well 2½ miles northeast of Roundhead and that far from production in Hardin County. It is now doing about as much development work as any company in the Lima Field.

In Benton Township, Paulding County, southwest of the Payne Field, J. H. McIntosh, a former Paintsville, Ky., operator, drilled in his second test 250 feet from the south line and 1,800 feet from the east line of the Brady Brothers farm, in the northeast quarter of Section 8, the well doing 5 bbls. and considerable gas. Top of sand at 1,407 feet and drilled 40 feet in. Estes, Myers & Bailey are drilling No. 1 on the George Birkhold farm, also to the southwest of Payne, in the same township.

In Middleton Township, Wood County, Lechner & Twining's second test, 715 feet from the north line and 620 feet from the west line of the Althea Jameson farm, Section 16, pumped 6 bbls. Top of Trenton at 1,220 feet and drilled 25 feet in. In Webster Township, same county, John Gelden and others' No. 4 well, 575 feet from the south line and 75 feet from the west line of the Charles Gelden farm, in the northwest quarter of Section 22, pumped 15 bbls.; top of sand at 1,224 feet and drilled 20 feet in.

Hancock County

Southwest of Findlay, in Liberty Township, Hancock County, the Base Line Oil Co. drilled in a 45-bbl. well in its No. 8 on the J. Steen farm, section 32, and is drilling No. 9. The West End Oil Co. is drilling No. 3 J. K. Wheeler farm, same section, and Starr & Clark are working at No. 3 Janes Wheeler farm, same section. In Allen Township, same county, P. J. Pool estate completed No. 11 well 600 feet from the north line and 200 feet from the east line of the Henry Franks farm, Section 7. In Biglick Township, same county, the River Cave Gas & Oil Syndicate struck a cave at 1,000 feet and being unable to drill by it abandoned the test which was being drilled on the L. Wanders farm, Section 35. In Eagle Township, R. T. Rittenhouse is drilling a second test on the Fred Freed farm, Section 6. No. 1 on this lease showed 25 bbls.

In Madison Township, Sandusky County, the Paul Oil Co. struck salt water in its No. 3 well, 1,000 feet from the north line and 1,200 feet from the west line of the C. P. Paul, Section 15. Sand was topped at 1,184 feet and salt water at 18 feet in. In Woodville Township, Gustave Magsig's No. 27 well, 700 feet from the north line and 200 from the west line of his own farm, Section 26, pumped 8 bbls., with top of Trenton at 1,254 feet and oil at 25 feet in. In Jackson Township, near Helena, Frank Haubert and others' No. 4 well on the George Vandersall, in the southwest quarter of Section 20, struck top of sand at 1,267 feet and oil at 48 feet in, the well doing 10 bbls.

In Union Township, Mercer County, in the Mendon district, E. A. Kuhns and others' No. 20 well, 840 feet from the north line and 560 feet from the east line of the George F. Griffen farm, pumped 10 bbls. Top of sand at 1,200 feet and drilled 50 feet in the sand. In Recovery Township, A. W. Neely and others' test, 500 feet from the south line and 250 from the east line of the A. Heitcamp farm, Section 23, pumped but 1 bbl. Sand was found at 1,141 feet and drilled 44 feet in.

Duster in Seneca

In Jackson Township, Seneca County, the Jerry Oil Co.'s test, 300 feet from the north line and 1,000 feet from the east line of the Philena Flack, mapped as the G. W. Jones farm, in the southeast quarter of Section 2, struck top of sand at 1,354 feet and drilled 151 feet in the sand to a total depth of 1,505 feet, and was abandoned, as no pay sand was found.

In the Elmore Field, in Harris Township, Ottawa County, Sherman, Richards & Nieman's No. 13 well, 200 feet from the north line and 700 feet from the east line of the H. W. Nieman farm, Section 18, pumped 18 bbls. the first 24 hours. Sand found at 1,289 feet and drilled 61 feet in.

Between the Elmore Field and the development at Catawba Island, nearly every available acre of land has been leased along the Portage River on both the north and south sides. This river empties in Lake Erie at Port Clinton, the wells on the island being located to the east. The Ohio Oil Co. and numerous smaller operators have secured the bulk of the leases, although the Underwood Oil & Gas Co. that drilled the two wells on the island holds a larger acreage, mostly secured after the completion of the initial well.

Indiana

Only one completion was reported from the Princeton district, in southwestern Indiana, for the week, being a wildcat venture made by J. H. Young and others', 225 feet from the north line and 1,120 feet from the east line of the August Krusemeyer farm, mapped as the Thomas Compton farm, in the southeast quarter of Section 1, Union Township, Gibson County, about a mile north of the hamlet of Mount Vernon and about 6 miles south and nearly a mile west of Princeton. The venture was given up at a depth of 1,502 feet as a dry hole. This test is close to 6 miles almost due west of the development work done in Section 6, Barton Township, same county, as well as 6 miles direct east from the town of Owensville. It is also about 5 miles south and 2 miles east of the town of Backs, which lies almost directly west of Princeton. South of Princeton is a wide territory that has been tested only in a scattered way. Taking the dry hole on the Krusemeyer farm as a starting point, to the south of this well 5 miles and about 2 miles east, a dry hole was found some time back in the western edge of fractional Section 5 of Johnson Township, and a mile east of the town of Hautstadt. Four miles northwest from the Young duster is another dry hole near the corner of Section 28, Montgomery Township, same county, and about 2 miles farther to the northwest is another failure near the southeast corner of Section 10, same township. Between the Young duster and Princeton three known dry holes have been found as well as a number of dry holes west of Princeton and directly south of Backs Pool. A dry hole was also found 2 miles east of Egg Harbor, in Montgomery Township, 3 miles south and 9 miles west of the Young duster.

In the eastern part of Indiana just at present the Leonard Extension in Maumee Township, Allen County, 18 miles northeast of Fort Wayne and approximately 15 miles northwest of the Payne Field of Paulding County, Ohio, is attracting more than passing attention. The completion recently of a well on the Helmke farm, in Section 34, of this township and an oil producer, along with the two good wells found by the Schuran Oil Co. on the Gerber farm, Section 16, 3 miles northwest of the Helmke farm, while nearly 2 miles north of the Gerber farm wells is a gas well on the south side of the Maumee River on the Butler farm, near the center of Section 9, showing considerable gas and a rock pressure of 472 pounds, makes at least 5 miles of territory almost north and south look inviting. The well that is now attracting attention is on the north side of the Maumee River northwest a short distance from the Butler farm gas well and on the William Kammyer farm, in what is known as the Horseshoe Bend of the Maumee. This well has been delayed by fishing and other trouble, but can be expected in at most any time. Should it prove either oil or gas, it will mean much for the new field. This test is being drilled by H. P. Manion of St. Marys, Ohio, Frank J. Estes of Greenville, Ohio, and Mr. Crouch.

It is announced that E. C. Ledford and A. S. Cohran are planning the drilling of a well in Section 16, not far from the wells on the Geber farm. Nearly

(Continued on Page 156)

Kentucky-Tennessee

By Vern T. Whitney

BOWLING GREEN, Ky., Dec. 28.—By the increase in completed work for the week in review it is evident that the operators made an effort to clean up as many wells as possible before the close of 1925. Warren County, for the first time in many months, led the Blue Gress State in new production, showing an increase of 73 bbls. daily from three producing wells. Barren County was second with 49 bbls. added production from five new wells, while the South Weir Field of Johnson and Magoffin Counties was third with an initial production of 44 bbls. from three producers.

Two dry holes were reported from Clay County, Tennessee, when Turner & English's test on the Jeff Loftus tract, a half-mile northeast of the Williams production at Tinsley's Bottom, was abandoned in the Trenton sand at 1,100 feet, and the Knox Oil Co.'s venture on the Dr. Mitchell lot at Butler's Landing, a mile north of the Tinsley's Bottom Pool, was plugged in the regular pay at about 160 feet below the black shale.

In the Owensboro Field of northern Kentucky, the Petroleum Extraction Co.'s No. 1 Keith, near Morgan, in Ohio County, was given up after the Jett and Barlow sands failed to show commercial production. Quite a bit of interest was manifested in this venture as it was 4 miles in advance of production. At Dermott, in Daviess County, Leonard & Co.'s trial on the James Miller place, 10 miles from production was abandoned at 1,350 feet.

The South Weir Field furnished the best well for the week in the eastern tier of counties. It is the Bed Rock Petroleum Co.'s No. 19 J. H. Arnett, in District No. 31, good for 30 bbls. on the pump from the Weir sand.

Southeastern Kentucky petroleum prospects were brightened when the Standard Oil Co. of Kentucky struck a good showing of oil in its wildcat, 10 miles southwest of London, in Laurel County, several miles from the Knox County line. When the sand was punctured at 710 feet oil rose 300 feet in the hole. As this test is in strictly wildcat territory it is being watched very closely, especially since the oil showing was reported.

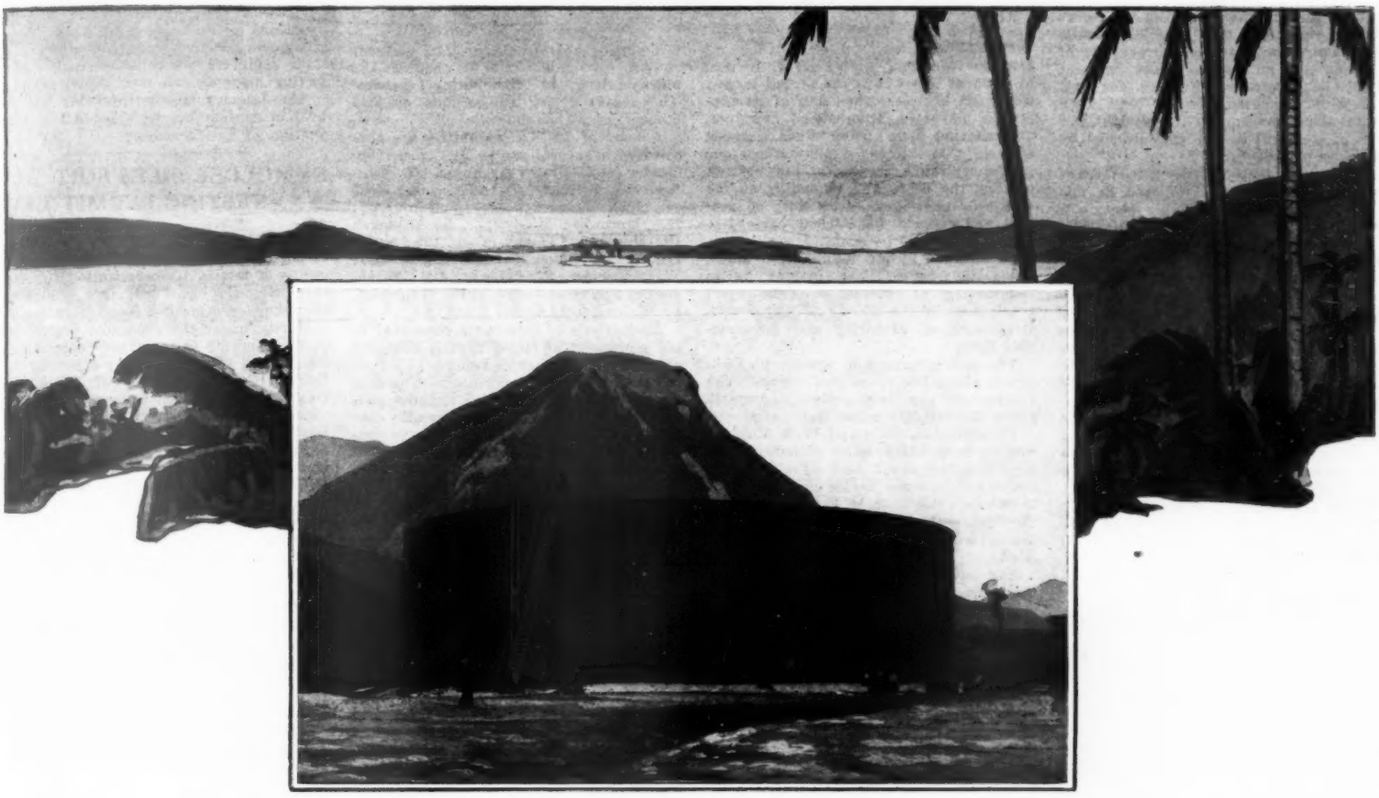
In the western division, the Lincoln Oil Producing Co.'s No. 3 Cal Snell in the Davenport Pool, Warren County, featured the week's completions. This well, several locations in advance of No. 1, pumped 38 bbls. after 16 feet of pay found at 100 feet below the black shale was shot with 80 quarts of nitro. It was finished at a total depth of 1,302 feet.

Week's Work

The past week in Kentucky and Tennessee shows 41 completions, 11 failures, 2 gassers and 28 producing wells with a flush of 261 bbls. Compared with the previous week, this shows 12 more completions, 8 more oil wells, 97 bbls. increase in initial yield, 4 more dry holes and the same number of gassers. The

(Continued on Page 156)

TO TORRID SOUTH



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NATURAL GAS DEVELOPMENTS

GAS DISPLACES COAL FOR DOMESTIC USES

Reports from gas companies for recent months show that the American public is becoming increasingly independent of supplies of anthracite. The present strike has increased demands for gas, and it is estimated that in New York State alone gas equivalent to 6,000,000 tons of coal will have been consumed by the close of the year.

Of the 100,000,000,000 cubic feet of gas, which will have been used in this State this year, about 60 per cent, will have been consumed in the 2,000,000 homes served by gas companies. A ton of coal or its equivalent produces 10,000 cubic feet of gas, and this, used as domestic fuel, will provide heat to that provided by two tons of coal. Thus every ton of coal used to produce gas means the saving of a ton of coal which otherwise might have been used for domestic purposes. In the case of New York State this amounts to 6,000,000 tons.

It is estimated that two-thirds of the food used in New York is cooked on gas stoves, while the per capita use of gas has increased from 6,500 cubic feet a year in 1910 to 10,000 cubic feet in 1925. Of the remaining 40,000,000,000 cubic feet of gas about 15,000,000,000 will have been used for lighting and 25,000,000,000 for industrial heating.

NEW SUPPLY OF GAS FOR CLEVELAND, OHIO

CLEVELAND, Ohio, Dec. 26.—For years the East Ohio Oil Co. has tried to discourage use of natural gas for heating purposes because of the dwindling supply from the old Ohio and West Virginia fields. Now for the first time in several years the company is urging use of gas as an auxiliary fuel. It has based this upon a quiet event that happened when the new $6,000,000 main, through 80 miles of West Virginia mountains, was opened to bring its first gas to Cleveland.

The new source is expected to replenish the supply to such an extent that the company suggests the use of it for heating during mild weather of fall and spring.

"We still warn it is inadequate for heating homes in cold weather," said Ralph W. Callagher, vice president of the company, "but it is the ideal fuel for this sort of weather for the past couple of months."

LOGAN GAS CO. FILES NEW RATE SCHEDULE

COLUMBUS, Ohio, Dec. 26.—A new schedule has been filed by the Logan Gas Co. with the Public Utilities Commission of Ohio for new rates in 72 towns supplied by them as follows: $1 for the first 500 cubic feet per month; 60 cents per 1,000 cubic feet for all over 500 cubic feet.

This schedule is to take the place of the one now in force under protest, which case is now being heard before the commission, the rates of which are as follows: 95 cents for the first 500 cubic feet per month; 45 cents per 1,000 cubic feet for the next 4,500 feet; 50 cents per 1,000 cubic for the next 5,000 feet; 55 cents per 1,000 cubic feet for the next 5,000 feet; and 60 cents per 1,000 for the next 5,000 feet.

The commission recessed the Logan Gas Co. rate case to Tuesday, January 5, 1926 (reserving three days), for the presentation of further evidence by the company and also reserve the three days commencing Tuesday, February 2, 1926, for the second session, when the company may continue or the solicitors cross-examine witnesses who have already testified on behalf of the company, as the developments may determine.

NATURAL GAS PIPE LINE MILEAGE SERVES THREE MILLION CONSUMERS

Pennsylvania leads in length of natural gas line operated, writes H. J. Struth, in Natural Gas. It is the second largest consumer, but more than half of its supply is imported from West Virginia, necessitating long trunk lines. About 365 cities and towns enjoy natural gas in Pennsylvania, mostly in the western part of the State and extending as far east as Greensburg. The flow of natural gas exceeds 400,000,000 cubic feet daily.

Ohio ranks second with 12,266 miles. From the Ohio River, northwesterly, terminating at Toledo, are the main trunk lines of the Ohio Fuel Corp. with a network of gathering and transmission lines.

The natural gas line system in Ohio serves about 395 cities and towns. The volume of gas transported aggregates about 330,000,000 cubic feet daily.

Pennsylvania, Ohio and West Virginia contain over 33,000 miles of natural gas pipe line, or about half of all in the country. In these States an average of a billion cubic feet is handled through the lines each day, about 35 per cent of the natural gas movement for the United States.

The natural gas pipe line mileage of the various States is as follows:

Pennsylvania, 16,926; Ohio, 12,266; Kansas, 6,839; Oklahoma, 6,464; California, 5,829; West Virginia, 4,516; Texas, 4,272; Kentucky, 1,995; Missouri, 1,816; New York, 1,428; Louisiana, 1,190; Arkansas, 1,139; Indiana, 683; Maryland, 457; Wyoming, 391; Montana, 354; Illinois, 107; total, 66,672.

To prepare the facts assembled here, Mr. Struth found it necessary to analyze the operations of over 600 natural gas companies operating in 21 different States. Of the 66,672 miles about 27,139 miles belong to distributing systems. This leaves a net transmission or field mileage of 39,533 miles.

A total of 1,933 communities are supplied with natural gas in 21 States, subdivided as follows: Arkansas, 27; California, 80; Illinois, 5; Indiana, 65; Kansas, 167; Kentucky, 41; Louisiana, 28; Maryland, 15; Mississippi, 3; Missouri, 19; Montana, 13; New York, 125; North Dakota, 2; Ohio, 395; Oklahoma, 169; West Virginia, 278; Texas, 120; Washington, 2; Pennsylvania, 365; Wisconsin, 1; Wyoming, 13; total 1,933.

An analysis of consumers connected to gas mains in 20 cities, reveals that the average mile of main supplies 92 consumers. Using the total distributing pipe line mileage, 27,139, which supplies natural gas to over 3,000,000 domestic consumers, the whole country's average consumers per mile is 111. A company in Cleveland, Ohio, operating 4,293 miles of lines and supplying 404,000 consumers, shows an average of 94 consumers per mile. Pittsburgh, Pa., with 2,882 miles of mains, supplying 297,000 consumers, shows an average of 102 per mile. Kansas City, Mo., with 548 miles of mains, supplying 77,000 consumers, shows an average of 140 per mile. Muskogee, Okla., with 115 miles of mains, supplying 7,000 consumers, shows an average of 61 per mile. Riverton, Wyo., with 15 miles of mains, shows an average of 40 per mile.

The combined gas pipe line mileage of the country, including transmission and distributing systems, shows that for every mile of line operated, there are 45 consumers.

NEW GAS COST BIG SUM HIGHER RATE IS ASKED

PITTSBURGH, Pa., Dec. 27.—Detailing the expenditure of $6.000.000 by the Hope Natural Gas Co. for the development of new producing fields in West Virginia, F. S. Cooper, chief engineer of the Peoples Natural Gas Co. testified at a Public Service Commission hearing on the petition of the latter concern to increase rates. The Peoples company is the distributor and the Hope company the producer. The protestants are from various parts of the western Pennsylvania district.

Valuation of the company's holdings were brought into the hearing counsel for the city of Pittsburgh and agreed to about two-thirds of the items contained in the estimated $7,000,000, which amount was fixed as the reproduction cost of the company.

GAS PEAK AS ALEXANDRA WED

The following is quoted from "Gas Progress," official news bulletin of the American Gas Association:

"Many survivors of Queen Victoria's reign, who attended the funeral of her daughter-in-law, the Dowager Queen Alexandra recently, remembered the day, 62 years ago, when Alexandra came to England to marry the then Prince of Wales, and the occasion was honored by a grand general illumination. The gas company sent out circulars several days in advance asking their customers to burn as little gas as possible during the week, so as to insure a sufficient supply to light every gas burner in London on the night of the celebration. Today a single industry in America uses more gas than the entire city of London when Alexandra was a girl."

DESCRIBES NEW DEVICE TO LOCATE GAS LEAKS

The Alpha-Lux Co., Inc., of New York City, has printed a booklet on the "Rapid" gas-leak finder. This is a simple device to locate a gas leak by indicating the presence of gas in the air.

The principal features of its mechanism are a cell closed at the bottom, with a porous plate to permit the diffusion of gas to enter the cell. The gas from the suspected air on entering the cell will create a pressure in proportion to the percentage of gas in the air. The pressure thus created acts upon a metal diaphragm similar to that in the aneroid barometer. The expansion of the diaphragm due to this presence is recorded or rather indicated on a graduated dial by a hand moving to the left as the pressure increases.

GASOLINE ENGINEERS ON COAST ORGANIZE

Organization of an association of Natural Gasoline Engineers was effected at a meeting held recently in Long Beach. P. D. Barton, of the United Oil Co., was selected as president; J. A. Campbell of the Lomita Gasoline Co., vice president; and J. S. Watson of the Shell Co., secretary.

The purpose of the organization is to promote technical research, and to offer a forum for discussion of problems pertaining to the gasoline division.

Seventeen companies, including practically all the large organizations, were represented by the 40 men who attended.

Following the business session a preliminary report on the "Effect of the Rate of Gas Flow on Results of Physical Refrigeration Tests" was presented, compiled from laboratory tests of the Signal Hill Gasoline Co. by L. O. Warner and M. L. Arnold, and read by Mr. Warner. Interesting tests on casinghead gasoline are being conducted by the gasoline departments of the large companies and their engineers are collaborating in perfecting methods and mechanical devices.

The January meeting probably will be held in conjunction with the A.P.I. convention at Los Angeles.

OKMULGEE FILES SUIT TESTING PERMIT LAW

OKLAHOMA CITY, Okla., Dec. 26.—Opponents of House Bill No. 4, as a means of testing its constitutionality, secured adoption of an ordinance forbidding the Okmulgee Gas Co. from operating in that city under the revocable permit secured from the Corporation Commission. This action was followed by a suit in the District Court asking that the Okmulgee Gas Co. be restrained from using present pipe lines under streets and alleys in Okmulgee and be required to tear up the pipes because the corporation has no franchise. The petition was filed by Wash E. Hudson of Tulsa, W. J. Otjen of Enid, members of the last legislature, which adopted House Bill No. 4, and who opposed the measure in the legislature, and by City Attorney L. L. Cowley of Okmulgee.

Grounds for attacking the law, given in the petition, were that the State laws prohibit the legislature from infringing upon the rights of a city of over 2,000 to act under its charter, also that the constitution of the State and of the United States confer exclusive authority on chartered municipalities to give franchises to corporations. It is stated by city authorities at Okmulgee that there is no intention of attempting to force the Okmulgee Gas Co. to suspend operation, but that the company is made defendant because it was the first to take out a revocable permit in lieu of its franchise. The suit is intended merely as a test.

TO LOWER INDUSTRIAL GAS RATE AT TOLEDO

TOLEDO, Ohio, Dec. 26.—Discussion of new gas rates, that would increase the number of large consumers, was opened at a meeting of a special cuncil subcommittee with J. W. McMahon, manager of the Northwestern Ohio Natural Gas Co. Small consumers will not be affected, it is said.

The new rates are being suggested in an effort to use the new supply that the company has procured for Toledo. Mr. McMahon announced that a new $1,500,000 gas line from the West Virginia fields would be completed this month.

This new line, an 11-inch main, will furnish approximately three times the city's present supply of natural gas. It is designed to take care of consumers during the heaviest demands.

Committee members were told that a slight reduction in gas rates to large consumers was imperative to bring back these patrons, the 87-cent rate having compelled many large consumers to abandon the use of natural gas as fuel.

Figures compiled by the company show that it had made a net increase of only 900 consumers during the past year. The company has sold about 427.000,000 cubic feet less from October 1, 1924, to October 1, 1925, than in the previous year.

PHILADELPHIA CO. BUYS

PITTSBURGH, Pa., Dec. 26.—Equitable Gas Co., subsidiary of Philadelphia Co., has bought leases on 120 acres in the Little McKeesport gas field at Whitesburg, Pa., from the Ritter Gas interests. Six wells are located on the property.

OIL FIELDS!

UNDERREAMERS
SWABS
ROTARY SLUSH PUMP PISTONS
TOOL JOINT TONGS

THE ONLY SWAB THAT IS CORRECT IN PRINCIPLE

Entering, 2 years ago, the highly competitive field of Swabbing, the GUIBERSON Swab forged rapidly to foremost place and is today swabbing more oil than all other swabs combined. The explanation has been that it is the only swab manufactured which is *correct in principle.*

Its principle is that of the bicycle tire pump, understood by every boy—that of the deep well pump, understood by every oil man. This principle causes the fluid pressure to *AID* the swab in its work. It explains why the GUIBERSON has broken all former records for volume of oil produced by swabbing. Another primary and exclusive advantage is its ability to pass through badly indented casing where old style swabs cannot pass at all. Fully patented.

EXPORT DEPARTMENTS of every leading supply company are prepared to make prompt shipments to any point in the world. All export shipments conform strictly to the customs regulations of the country shipped to.

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Dallas, Tex.

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1506 Santa Fe Avenue,
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GUIBERSON

BETTER BE SAFE THAN SORRY — GUIBERSON

MEN KNOWN IN OILDOM

William C. McDuffie

William C. McDuffie, who has been named general production manager of the Shell group of associated companies throughout the world, won the promotion by his work as vice president and manager of production of the Shell Company of California.

He has recently returned to Los Angeles from The Hague where the new appointment was announced by Sir Henri Deterding, director general, following a meeting of the board of directors. He will retain his headquarters in Los Angeles for the present but will leave early in the new year for South America where he will give special attention to the Venezuelan Field in which his company is extensively interested.

Mr. McDuffie joined the Shell interests in California in 1913 as field superintendent in the Coalinga district after experience as a laborer with a pipe gang, driller and in other positions with the North American Consolidated Company in the Midway Field. He was transferred to southern California when the Shell Company began pioneer work in the Signal Hill, Long Beach, Field, being elected vice president in succession to Paul Paine in June, 1923.

During Mr. McDuffie's management the Los Angeles office has been the clearing house of the Shell Company for operations here and abroad and is expected to continue to be so now that he has been given direction of world operations.

PERSONAL PARAGRAPHS

David Ziegler, of Springfield, Ohio, is in Bowling Green, Ky., mingling with his old friends.

* * *

Wood Kirkpatrick of Bowling Green, Ky., spent a few days in Toledo, Ohio, during the week-end.

* * *

P. W. Sherman, of Lawrenceville, Ill., is in Cookeville, Tenn., where he will maintain headquarters for the present.

* * *

E. J. Cunningham, who has been operating in Central Texas, was in Los Angeles recently, but left early this week for Denver, Colo.

* * *

M. R. Singleton, general manager of the Paragon Refining Company of Toledo, Ohio, made a business trip to New York during the week.

* * *

H. Z. Clarke, who recently brought in the big Grey well in Clay County, Tenn., is in Bowling Green, Ky., for the Christmas holidays.

* * *

C. F. Dickson, of Cincinnati, Ohio, was a recent visitor at Cookeville, Tenn., where he purchased several leases in the vicinity of Celina, Tenn.

W. W. Trout, sales engineer of the Lufkin Foundry & Machine Company, is in Tulsa making a survey of that section of the Mid-Continent territory.

* * *

S. J. Hardison, general superintendent of the Milham Exploration Co., spent a few days in Maricopa recently, but is again back at his desk in Los Angeles.

* * *

George Christman of the Michigan-Ohio Oil & Gas Company of Napoleon, Mich., has returned from a trip to northern New York in the interest of his company.

* * *

J. H. McClurkin, who has been doing considerable engineering work in the Clay County, Tennessee Field, is spending the holidays with his family at Winchester, Ky.

* * *

Mark L. Requa of San Francisco was in Washington recently attending the wedding of Thomas A. O'Donnell, former president of the American Petroleum Institute.

* * *

Mr. and Mrs. George Bennett and daughter have returned to Chatham, Ont., from Peru, where Mr. Bennett has been engaged with the International Petroleum Company.

* * *

M. L. Freese, vice president of the Altitude Petroleum Company of Tulsa, left last week for a visit to New York and Philadelphia. He will return to Tulsa after the holidays.

* * *

N. Garland, field manager for the Makeever Brothers of Boston, Mass., is in Bowling Green, Ky., after spending several months in the Mid-Continent fields for his concern.

* * *

Bert Graves, sales representative of the Associated Oil Company in the Orient, has returned to his home in San Francisco. Mr. Graves has spent the past three years in the Orient.

* * *

Clyde Dyer has been appointed district conservation agent under the Oil and Gas Conservation Bureau of the Oklahoma Corporation Commission with headquarters at Ardmore, effective December 1.

* * *

Mr. and Mrs. C. A. Wheatley and J. S. Daniels of the Wheatley Oil Company, and A. Harry Wells of the Oil Well Supply Company at San Antonio, Tex., are all back from a hunt in the Big Bend country.

* * *

G. S. Richmond has been appointed assistant district manager for the Continental Supply Company at Corsicana and Mexia, Tex. These two stores have been transferred from the Fort Worth to the Houston district.

* * *

Felix A. Vogel, consulting geologist, who for 18 months has been doing geological work in California and the Rocky Mountains, has recently returned to his San Antonio, Tex., office, but is leaving soon for further work.

* * *

P. F. Egan, retired district foreman of the Southwest Pennsylvania Pipe Line Company, spent last week under observation at the Allegheny General Hospital, Pittsburgh, Pa. Mr. Egan's health has not been good for more than a year.

* * *

Rodney S. Durkee, comptroller of the General Petroleum Corporation, left to attend the meeting of the American Petroleum Institute Committee of uniform accounting. Mr. Durkee is chairman of this committee on the Pacific Coast.

* * *

Clarence Berry of San Francisco, president of the Ethel D., B. B. & O., Berry & Ewing and other oil concerns in the West Side fields, was in Taft last week inspecting his properties with a view to the expansion of operations early next year.

* * *

Harvey C. Couch of Pine Bluff, Ark., president of the Louisiana Power & Light Company and of the Arkansas Power & Light Company, was a recent Shreveport, La., visitor. The public utility corporations of which Mr. Couch is the head, operate in four States, Louisiana, Arkansas, Mississippi and Alabama, their super-power plants reaching from Homer, La., to within 20 miles of the great power station at Muscle Shoals.

W. Paul Gage, vice president of the Pure Oil Pipe Line Company of Texas, with headquarters in Dallas, left for Chicago recently on business connected with the Prairie Oil & Gas Company's purchase of a half interest in his company's line.

* * *

John B. Tonkin, vice president and general manager of the Peoples Natural Gas Company, after undergoing a successful operation for appendicitis at Columbia Hospital, was able to leave that institution and is recuperating at Atlantic City.

* * *

W. L. Connelly, manager of the Mammoth Oil Company and the Sinclair interests in this region, returned from a trip East where he was in conference with the officials of the Sinclair Companies in New York. He was accompanied by his daughter, Miss Betty Connelly.

* * *

E. D. Marr, chairman of the board and vice president and treasurer of the Marine Oil Corporation, has resigned from the company because of ill health. Mr. Marr, one of the organizers of the Marine Oil Corporation, will make a trip around the world in an effort to regain his health.

* * *

E. R. Brown, president of Magnolia Petroleum Company, was elected president of the Dallas Chamber of Commerce for 1926. He succeeds T. M. Cullum. Albert Reed, commerce counsel of the Chamber of Commerce, was elected secretary to succeed Charles H. Saville, resigned.

* * *

Edward Wilkins, coastal contractor, has returned to his home at Bay City, Texas, from western Kansas, where he is drilling wildcat wells for Kansas City men. The location is in the extreme western part of the State. One test was abandoned around 3,000 feet and a second is now drilling.

* * *

Jake Hamon, Jr., of Ardmore, Okla., was a business visitor in Dallas, Tex., recently. Besides operating in the southern Oklahoma district, Mr. Hamon has been quite active in the Ranger, Tex., region and contemplates drilling in the Cross Plains area of Callahan County, Tex., where he has acreage.

* * *

W. C. Hart, mining engineer, and formerly engaged in the mining of iron ore on the Messaba range of Michigan, has been examining properties in the Salt Creek Field during the past few months for clients in Michigan and he has started East to spend Christmas with his family in that State.

* * *

Upon their return from a trip to Oklahoma, where they had an opportunity of investigating the results of the air tests conducted by their company in increasing oil production, President E. A. Durham and J. P. Flynn, members of the board of directors of the Wiser Oil Company, were very much pleased with what has been accomplished thus far, and state that the outlook is most promising for the Wiser in greatly increasing production in Nowata and Rogers Counties.

* * *

V. H. McNutt, geologist, who located the structures that resulted in the discovery of the Artesia Field in New Mexico, and who has been spending some months in that territory, drove through by automobile to San Antonio, Tex. He remained only a short time and then left for Tulsa. He says the Artesia Field has 4,500 barrels daily production from a depth of about 2,000 feet and from 110 wells and with 10 inside dry holes. It is making a good field and a readjustment of freight rates promises to be of great benefit to the field.

* * *

C. A. Young, director of the American Petroleum Institute, in charge of standardization, returned to his office in Dallas, Tex., recently from a meeting of the committee on the standardization of belting, which was held in Chicago. He then left for Houston with Capt. J. F. Lucey of the Lucey Petroleum Company, national chairman of the standardization committee for rotary drilling equipment, and R. A. Wilson of the Guiberson Corporation, to supervise field tests of some of the recommended standards of Lucey's committee. W. W. Fondren of the Humble Oil & Refining Company, chairman of the Texas district sub-committee on rotary drilling equipment, and others joined the party at Houston. A report of the field tests will be made at the Los Angeles meeting of the committee during the sessions of the American Petroleum Institute.

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and reds

A complete line of zero oils graded to suit all requirements, in all climates, the year 'round

CROWN zero pales and reds, of our own manufacture, range in viscosities from 100 at 100° with a pour test of below zero, to 2500 at 100° with a pour test slightly above zero. They have exceptionally low carbon content, good demulsibility and color

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Refinery and Terminal: Houston, Texas

EQUIPMENT AND SUPPLIES

EXHIBITS ENGINES AT CHICAGO ROAD SHOW

The Climax Engineering Co. will exhibit a complete line of engines at the Chicago Road Show. All of its various series are shown as bare engines, or as portable power units. Among the models will be the "TU" engine, a popular size for road equipment. This is a four-cylinder engine, having a 5½-inch bore by 7-inch stroke and a horsepower range of 50 to 75. The piston displacement is 665.0 cubic inches. The engine is equipped with water inlet pipe, water circulating pump, dust-proof priming cups, Climax built-in governor, and gear-driven cooling fan.

The "R" series Climax engines will be shown in two models, a four-cylinder and a six-cylinder. Both models have a 6-inch bore and a 7-inch stroke and are of the enclosed flywheel type with ledge mounting. At 1200 r.p.m. the B.H.P. for the six-cylinder engine is 132; for the four-cylinder, 92.5

BURKHARDT CO. BUYS SPARTA CO. BUSINESS

All the patterns, patents, jigs, dies, stock and good will of the Sparta Drilling Machine Co., of Sparta, Wis., have been purchased by the Burkhardt Co., of Kiel, Wis., according to an announcement just made by the latter firm, which has been in the business of manufacturing well drive shoes and other tools for the past 20 years.

All of the above mentioned assets, including machines, engines and tools, have been transferred from Sparta to the Burkhardt company's plant at Kiel, Wis., and the firm is in position to furnish repairs on all styles of "Sparta" equipment. New "Sparta" machines, exactly as made heretofore, will be manufactured by the new management within the next three months, it is expected.

SELLING MEDIUM FOR EUROPEAN TUBE MILLS

The American Seamless Tube Corp., with general offices in New York and sales offices in Houston, Los Angeles, and Tampico, intend coming into the Mid-Continent Field in an active way and has made a distributing arrangement with Moran-Dwight & Co., who will represent it in the States of Oklahoma, Kansas, Colorado and Wyoming.

The American Seamless Tube Corp. is organized as a selling medium for the output of a combination of 19 seamless tube mills in Europe, located in France Belgium, Germany and Czecho-Slovakia.

VISITED MID-CONTINENT

Donald J. Woodriff, New York City sales manager for the Wall Rope Works, Inc., has returned to New York following a visit to the company's Mid-Continent office at Bartlesville, Okla. Mr. Woodriff made the rounds of the principal oil fields in Oklahoma, Kansas and Texas, calling on the trade, accompanied by J. L. Dittman, who has charge of the oil country sales for the Wall Rope Works, Inc.

NEW INSTRUMENT CATALOG

The Taylor instrument Co., of Rochester, N. Y., has distributed catalog part No. 4,000 which shows the recent developments and new models put into its products. The catalog elaborates upon the operating principles of the pyrometers and their use in production where uniformity of quality is demanded. The catalog is attractively printed and well illustrated.

TORSIONAL BALANCE OF IMPROVED DESIGN

The new improved "Oertling" model of the Eotvos Torsion Balance has been designed with the special object of reducing labor to a minimum and enabling the instrument to register its movements photographically, according to a circular published by the manufacturer, L. Oertling, Ltd., 88-90 Turnmill Street, London.

The Eotvos Gravity Balance for the location of subterranean mineral deposits was originally designed as a visual reading instrument, the small torsional displacement of a mirror rigidly attached to a beam being observed by means of a telescope and scale as in the mirror galvonometer and similar instruments.

The long brackets necessary to carry the telescopes, however, required a tent

about 6 feet square and had several other disadvantages, so in the new design the telescope arms are eliminated and the displacement of the beam is recorded photographically. The optical system is enclosed within the outer protecting wall which surrounds the upper torsion wires and the effective width of the instrument is reduced to less than 2 feet. A special cylindrical metal tent encloses the instrument completely.

The rotation of the upper part of the instrument into the various azimuths is effected by a clockwork mechanism controlled by an electric time-clock, which also controls the illumination of the scales at proper intervals for the photographic record.

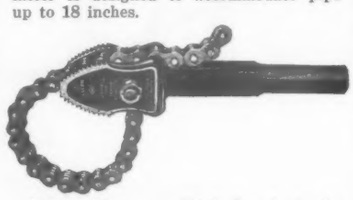
The instrument can also be used visually by replacing the photographic plate with a ground glass screen. An important feature is the optical system which throws a magnified image of the actual scale upon the sensitive plate instead of the customary spot of light. Magnifying up to five times greatly increases the sensitivity of the reading.

HOLIDAY GREETINGS

A Christmas greeting card of unsual merit has been sent to the trade by the Sweeney & James Co.

CHAIN PIPE TONGS OF LIGHTER WEIGHT

J. H. Williams & Co., "The Wrench People," Buffalo, N. Y., have added to their line of "Vulcan" chain pipe tongs a new size, No. 15½. This tool, with a capacity of from 4 to 16-inch pipe, is lighter in weight and consequently easier to operate than "Vulcan" No. 16. The latter is designed to accommodate pipe up to 18 inches.



Unless pipe over 16 inches is to be handled, it is claimed this new "Vulcan" will do the work quicker because of its decreased size and weight, and more economically because of its lower cost.

In design, workmanship and material this new tool is the same as Williams' "Vulcan" line. Its chain is individually proof-tested to two-thirds of its breaking strain—30,000 pounds—and is certified. This, it is stated, assures dependable service and safety to the operator. All "Vulcans," the manufacturer states, are guaranteed.

ROTARY UNDERREAMER DESCRIBED AS UNIQUE

The inventor of the Grant Standard Underreamer has just placed upon the market a new type of rotary underreamer which is said to be attracting considerable attention on the Pacific Coast because of its unique features.

A. G. Grant, of the Grant Forge Shop in Los Angeles, inventor, has constructed an underreamer with a removable bit and three cutting elements that is reported unlike any other underreamer. It consists of only seven parts. It permits of the underreaming of a rotary hole in the same manner as by standard drilling and is expected to attract attention in the Mid-Continent Field, where it is to be introduced immediately, according to Mr. Grant.

NEW GENERAL SALES MANAGER

Announcement has been made by the Oxweld Acetylene Co., 30 East Forty-second Street, New York, of the appointment of J. N. Walker as general sales manager. L. D. Burnett has been appointed eastern department sales manager to succeed Mr. Walker, and Z. T. Davis, Jr., is now filling Mr. Burnett's former assignment as assistant sales manager, eastern department. Mr. Walker is well known in the oxy-acetylene industry, having served for years in progressive advancement through the Oxweld sales organization.

AIR HOIST CATALOG

The Sullivan Machinery Co., of Chicago, Ill., has printed a catalog explaining the merits of the new Sullivan "Turbinair" portable hoist. These small compressed air hoists have been adopted to a wide range of industrial and mining uses since their introduction some five years ago. While the horsepower of these units is small, their load capacity is remarkably high.

JOINS ADVERTISING STAFF

A. N. Hexter, who was for several years in the Mid-Continent oil field as a drilling contractor, has joined the staff of the Ehlbert Advertising Service, Inc., of Chicago, Ill.

LEAFLETS ON WINCH AND TUBING CATCHER

The W-K-M Co., of Houston, Texas, has printed leaflets on two of its products, the W-K-M Wilson Winch for Fordson tractors, and the W-K-M tubing catcher.

The winch is especially designed for pulling rods, tubing and casing and is distributed through the regular supply stores and Ford agencies, according to announcement of the makers.

The tubing catcher leaflet illustrates the working parts of the appliance, and emphasizes the simplicity and positive action of this article of equipment.

PUMPING POWERS BOOK TREATS OF ALL PHASES

The National Supply Cos., of Toledo, Ohio, have issued a book on National pumping powers. The book is very complete, and describes in detail the general construction and operation of powers. The book treats all phases of the well pumping problem separately, from the laying out of equipment to the act of pumping. It contains detailed drawings of each part of the various types of power.

The construction of houses for powers of all kinds is given a chapter, and the parts necessary and advisable for building are listed.

DIAMOND DRILL CATALOG

The Sullivan Machinery Co. has issued Catalog No. 80-0, describing Diamond drilling for oil. A large amount of new material has been added to this catalog, relative to new types of diamond core drills for oil field work, which have been brought out in the past two years. It is liberally illustrated with pictures from the field showing different applications of the diamond drills in many parts of the world, and in many different oil fields. An article on the use of the diamond drill in structure testing by Kay Peters, of Tulsa, Okla., is included.

The Sullivan Class FK diamond drills, which have bored to a depth of over 6,000 feet (in India) for heavy duty wildcatting, and the Class CN mounted diamond drill, operated by a Fordson power plant for rapid exploration work in testing structure, are fully illustrated and described. Specimen equipment lists and full information regarding the setting of diamond bits and the operations of the drills in the field are included.

Copies will be sent upon request by the Sullivan Machinery Co.

ISSUES NEW CATALOG

The Bartlesville Supply Co., of Missouri, manufacturer of the Barsco line of oil and gas well equipment, has just published catalog No. 5 which contains complete information on its products and in addition a table of casing and coupling dimensions which should prove of much interest. The new catalog lists for the first time the Barsco All-Steel Braden Head. This product was formerly made of cast iron and the manufacturer claims that the forged steel construction will give very much better service.

SERVICE ACCESSORIES

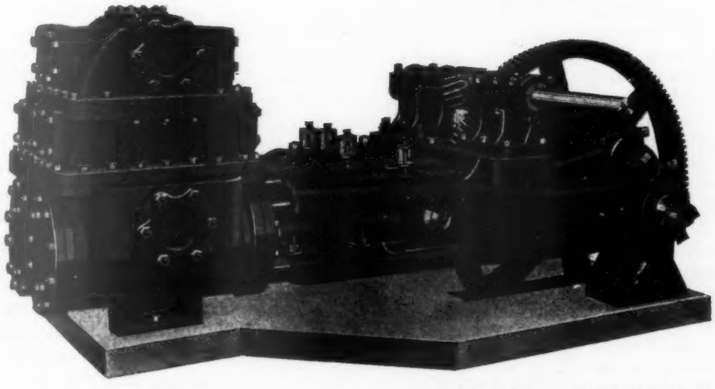
Accessories for the service station are described and illustrated in a little booklet being distributed by the Butler Manufacturing Co. of Kansas City, Mo. The equipment listed includes a stationary floor or wall rack, a portable display rack, a display barrel with glass gauge set in bronze fittings, a pressure lubricator which saves about 75 per cent of time spent in greasing and yard display signs.

pumps the best materials and the finest workmanship we can buy. The purchaser gets out of them the most dependable pump service obtainable.

The pictures on this page show a few members of the Gaso "family." The entire line, embracing types for every field, refinery and pipe line requirement, is described in our new 88-page catalogue. We will gladly send you a copy of this catalogue without obligation.

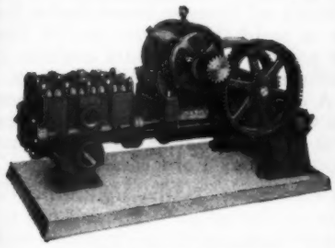
CO., Tulsa, Okla., U. S. A.

No. 604: Walking beam and power pump designed to take gas from pumping well or put vacuum on well. Strongly built.

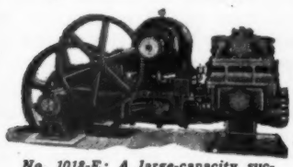


No. 1018: A big, powerful member of the Gaso family, designed for main line pipe line use. A suction pump available in three sizes: 6, 8 or 10x18.

Headquarters for Motor-Driven Pumps



No. 501-E: A general service pump fitted for electric operation. (In the field of electrically operated pumps Gaso is a pioneer.)



No. 1018-E: A large-capacity suction pump for field or station service; motor-driven.

No. 504-EC: A motorized model of a popular Duplex Piston Gear-Driven Pump for 450 to 800-lb. pressures.

Gaso FITTINGS include heater heads, Beckwith Swing Check Valves, Liner Expanders, Pipe Saddles and Clamps, Pipe Line Strainers, Flange Unions, Tees and Ells.

Thorough Inspection at the Plant Assures Perfect Operation on the Job

World Survey of Oil

BY W. T. ANDERSON

OIL has become a matter which affects the progress and comfort of the whole human race, declares Sir Charles Greenway, chairman of the Board of Directors of the Anglo-Persian Oil Company, in a contribution to this World Issue of The Oil and Gas Journal.

"The great oil companies operate in every part of the world where oil is to be found and a new gusher cannot be brought in amid the jungles of the East Indies or on the desolate pampas of Patagonia without its roar being heard in the offices of oil men in New York, London, Paris and Berlin. A change in the price of Oklahoma crude has repercussions which reach Manchurian coolies huddled over their oil stoves and East African negroes trundling their produce to market in their Ford cars."

It is that view of "the significance of the international character of the oil industry and the vital part it plays in the general progress of civilization" which has led The Oil and Gas Journal to issue a World Survey of Oil at the close of each year.

The immediately practical value of such a resume of world conditions in oil is brought home to American oil men by this extract from the review of the Group 3 market for the week before last:

"The reaction in the gasoline market is attributed directly to the failure of exporters to continue purchases of higher gravity gasolines. The strong markets of the past six weeks were due entirely to heavy export purchases. As soon as the export buying stopped the market stopped its climb, prices became steady and started downward again."

This is no unusual experience, as the market reports show. It emphasizes the importance of the export situation even in inland American markets and likewise, as Sir Charles Greenway says, how a change in the price of Oklahoma crude has repercussions in far away Manchuria and East Africa.

It is clear, therefore, that a study of world oil conditions is of immediate importance to every oil man, no matter where he operates. From week to week The Oil and Gas Journal reports important operations and movements abroad with as much care as those in the United States, but just as The Journal issues an annual review of American operations, it is necessary to present a composite picture of petroleum as a world product to get the proper perspective on existing conditions.

REMARKABLE CHANGES

This World Survey this year is of more than usual value and importance because of the remarkable changes which are taking place abroad.

With the Locarno agreement Europe is nearer stabilization than it has been since the war. There is a general feeling here and abroad that at last Europeans are going to be freed from the incubus of post-war politics and permitted to make a real beginning towards getting back to normal.

The improvement in industrial and commercial conditions that followed the Dawes agreement may now be expected to forge ahead and today business progress is impossible without increased consumption of petroleum products.

That Europe fully realizes this is shown by the fact that our exports of trucks and busses increased 83 per cent in the first nine months of this year. Our exports of passenger cars increased 57 per cent.

This means that Europeans understand that if they are to approach our standards of efficiency in production and commerce they must strive to equal us in the employment of labor and time-saving agencies, of which the most important in the modern world are the engines powered by oil and gasoline.

How far the rest of the world lags behind us may be measured in terms of per capita consumption of gasoline. In this fortunate land we consume about 90 gallons per year per head of population.

In England the consumption of gasoline is less than 12 gallons per capita, while for all Europe it is only one-sixth of a gallon.

We are, of course, familiar with the thought that the United States operates 19,000,000 motor vehicles and all the rest of mankind but 3,000,000.

But these proportions are not going to last forever. It is agreed that in the years to come there will be a much greater percentage gain in number of motor engines abroad than in the United States.

We have been supplying about 66 per cent of the gasoline for other countries but there are indications of Europe's obtaining a largely increased proportion from its own sources.

EUROPE'S REFINERIES

England, for example, has been enlarging its refinery capacity encouraged by the crude production, actual and potential, in Persia and by the availability of oil from Russia, Poland and probably Rumania.

We are accustomed to belittle Russia's possibilities, (although Europe has produced 20 per cent of the world's oil), but it is agreed that its production is getting back to comparison with pre-war output and the competition of Russian products in European markets is being felt.

New oil districts and deeper sands are increasing the production of Rumania. The adoption of modern American methods of operation in the producing fields and the fact that England's refineries especially are of the newest type, is significant of the world's growing ability to find its own petroleum products.

Meanwhile, Mexico's decline, while continuing, is likely to be protracted, and Venezuela and Colombia are promising to more than compensate it. Argentina and Peru are making progress in oil and Guatemala and other countries in the Western hemisphere are potential reserves awaiting the need for development.

Part of this South and Central American production will, of course, go across the ocean, but the bulk of it may be counted on as likely to continue to come to American refineries or at least be marketed by American companies.

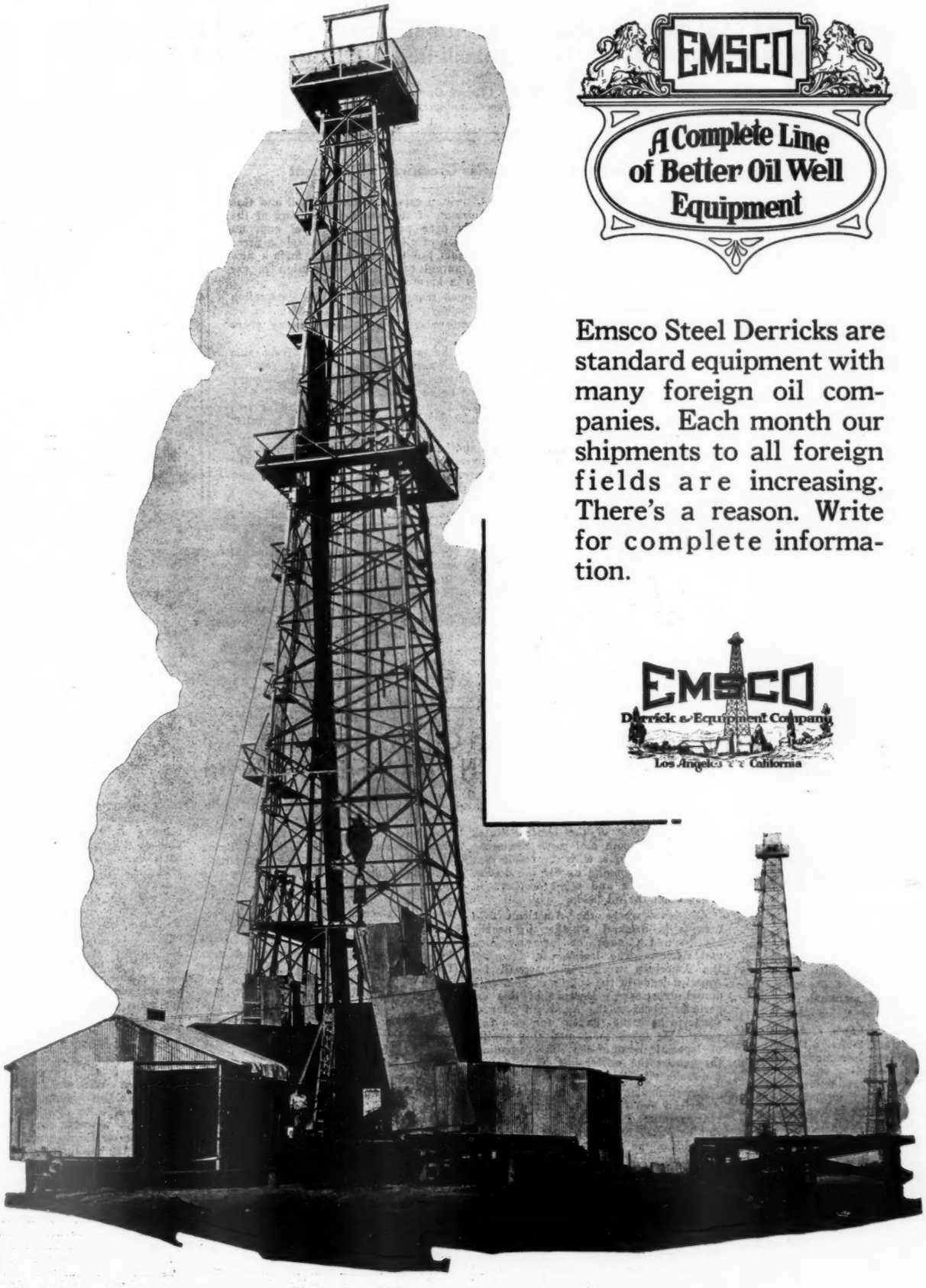
On this side of the Atlantic also there is a remarkable gain in the use of motors, some South American countries exceeding the development in Europe. Australia continues to be, next to ourselves, the most general user of the automobile, but Argentina is second, both leading England.

This growing use of the motor and the old world's growing supply of oil from its own sources are the chief points in the year's petroleum news abroad. So far, they are trends rather than actual developments, but they are significant particularly with the prospect of restored normalcy abroad.

At the same time, there is reason to believe that the foreign demand for American petroleum products will continue to grow because the old world is far from prepared to assume the whole burden.

That view is best summarized by Edward Prizer, chairman of the board of the Vacuum Oil Co., in this issue of The Oil and Gas Journal:

"While it will be a long time before any parity of consumption between foreign markets and the United States can be looked for it is reasonable to assume that foreign requirements must increase with the improvement of economic conditions and a consequent increase of all forms of human activity in connection with which petroleum is the vital factor."



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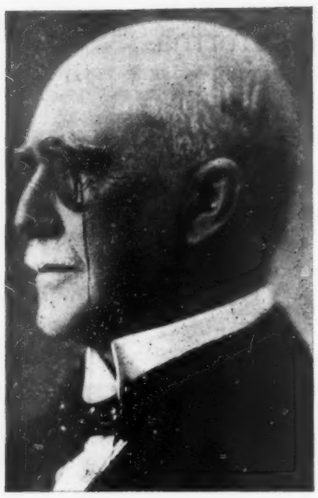
World Oil Reserves and Development

Head of Anglo-Persian Oil Company Says Industry Is International and Must Be Approached in International Spirit

By Sir Charles Greenway
Chairman of Board, Anglo-Persian Oil Co.

It is significant of the international character and activities of the oil industry, and the vital part it plays in the general progress of civilization, that oil has become a vital necessity for almost every national. Oil men have taken the whole world as their province. There is no industry which in its operations and interests so completely transcends national frontiers. And this applies, not only to the distribution of oil products, but to the production of crude petroleum as well. The great oil companies operate in every part of the world where oil is to be found, and a new gusher cannot be brought in amid the jungles of the East Indies or on the desolate pampas of Patagonia without its roar being heard in the offices of oil men in New York and London, in Paris and Berlin. A change in the price of Oklahoma crude has repercussions which reach Manchurian coolies huddled over their oil stoves and East African negroes trundling their produce to market in their Ford cars. Oil has become a matter which affects the progress and comfort of the whole human race. This is a reflection which



Sir Charles Greenway

naturally inspires oil men with a feeling of intense pride in their profession, but which must also bring to them a deep sense of responsibility. We are the custodians of one of the most precious possessions of mankind.

No Danger of Exhaustion

Regarding the richness and duration of the vast estate which oil men administer, there have been and, no doubt, still are many conflicting opinions. Even now, when increased production is threatening the stability of oil markets and the American industry is burdened with hitherto unexampled stocks, the voice of distinguished pessimists is heard warning the world of the approaching exhaustion of its oil resources. Personally, I have never been able to take such fears very seriously. It is true that oil is a wasting asset and that what we take out of the ground is not being replaced—or replaced by natural forces which work too slowly to be taken into practical consideration. It is true also that the finding of oil is not an exact science, and that no man can speak with assurance of the oil in any field until the drill has released it. But if this is an argument against undue optimism it is equally powerful against exaggerated pessimism. And so far the history of the oil industry has been all on the side of the optimists.

In the United States, where oil exploitation on the modern scale has been going on much longer and more vigorously than anywhere else in the world, there is no indication that the present enormous production will not continue for many years to come. In fact, it is the present problem of the industry to prevent it being considerably surpassed. New fields are constantly being discovered, and other fields are being restored to prolific activity through the tapping of rich sands deeper down.

In South America the present rapid development of Venezuelan oil territory reminds us that we have hardly begun to nibble at the immense resources which await exploitation. Colombia, Peru, Ecuador, Bolivia, the Argentine, all possess oil fields of great promise which only await the more insistent demand of the world's markets.

Roumania and Russia

Europe has been less favored by nature in the matter of oil supplies, but there can be little question of the great potentiality of the fields of Roumania and Russia. Southern Russia possesses some of the richest oil territory in the world, though it seems likely that its development will be slow in view of the unsettled nature of the social and political conditions there. Already, however, the output has risen to 80 per cent of the pre-war figure and the exports to 125 per cent, due largely to the temporary lack of home demand.

In Asia the main sources of oil production are in India, the East Indies and Persia. For years past India has gone on producing over a million tons of petroleum annually, and there is every indication that it will go on doing so for years to come. The East Indies contribute more than twice that amount. The Persian production is over 4,500,000 tons a year and for economic reasons is kept at that figure, but if there were pipe line and refinery facilities to handle it, and markets to receive it without disturbing the economic equilibrium, the output from existing wells could be raised immediately to 10,000,000 tons. And we are only at the beginning of the work of development in this country.

This necessarily superficial survey of the oil resources of the world must make it clear how little heed we need pay to the bogy of early exhaustion. I am convinced that, unless these resources are wasted by reckless exploitation, the present world production of petroleum will be maintained and even largely increased for generations to come. And when the free petroleum of the world shows signs of exhaustion there will still be the enormous supplies locked up in the world's shale fields whenever it may pay to produce oil from this practically inexhaustible source. Furthermore the constant improvements which are being made in refinery methods and efficiency will enable us to get more and more value from each barrel of petroleum produced, so that the different demands of the world's markets can be more economically met.

Care in Exploitation

We must not, however, permit our optimism with regard to the world's oil supplies to blind us to the necessity for the utmost care in their exploitation so that the factor of waste can be as far as possible eliminated. There is oil enough for every reasonable human use for many years to come, but not enough for a barrel of it to be wasted. Unfortunately, there have been in the past very large and irreparable losses as the natural result of a highly competitive and somewhat reckless system of exploitation. With the far better organization of the oil industry which exists today, these losses should be very largely prevented. In this connection, one cannot do better than second as urgently as possible the strong plea made by President Coolidge for the conservation of oil resources.

Careful conservation is all the more necessary that the demand for petroleum products is constantly increasing. It is true that today refinery stocks are higher perhaps than ever before in the history of the industry, but not so, relatively to the increase in the world's consumption. Even should the home demand of the United States become more or less static—already, I notice, there is talk of the motor car trade there reaching the "sat-

(Continued on Page 190)

Features of Sir Charles Greenway's Statement

In the accompanying statement, written especially for The Oil and Gas Journal, Sir Charles Greenway, chairman of the board of directors of the Anglo-Persian Oil Co., is optimistic over petroleum supplies, endorses President Coolidge's plea for conservation of oil resources, forecasts a great increase in the consumption of petroleum products abroad and finds a new and better spirit of fair play and mutual trust and cooperation in the industry. Some of the salient points in his statement follow:

I have never been able to take such fears (of approaching exhaustion of the world's oil resources) very seriously.

There is oil enough for every reasonable human use for many years to come, but not enough for a barrel of it to be wasted.

Unfortunately, there have been in the past very large and irreparable losses as the natural result of a highly competitive and somewhat reckless system of exploitation. With the far better organization of the oil industry which exists today, these losses should be very largely prevented.

Even should home demand of the United States become more or less static there would still be left enormous possibilities for growth in other parts of the world.

The oil industry is in the widest and best sense an international industry, and its larger problems must be approached in an international spirit. Oil has become a vital requirement for every civilized country, and there is room for the oil men of all nations in the great task of supplying it.

GETTING AMERICAN OIL WORKERS FOR FOREIGN FIELD OPERATIONS

By N. O. Fanning

NEW YORK, Dec. 28.—Prospective oil areas outside of the United States are becoming more and more the scene of actual operations, with the result that a new field is opening up for the driller, the tool dresser and other workers in and around the oil fields.

And everywhere the American field man is in demand, whether in nearby Mexico and Canada, or far-away Asia and Africa. The leaning in favor of the American worker is natural, for America leads in the supply of men with actual experience. Because of this experience, perhaps, the American oil man seems to have the "knack" for good field work. He takes to it, and this quality of special adaptability is recognized throughout the world, just as is American-made oil field equipment.

American labor is required both by American and foreign oil companies operating abroad. Naturally, this labor can be found chiefly in and around the oil fields of the United States. But often American oil drillers or field men desire to serve in foreign fields, but find it difficult to make connections. The chief difficulty is, as with most such things, distances are so great as to make it hard for the two parties—individuals seeking work and companies seeking workers—to meet.

Although there is a growing demand for workers in foreign fields, the demand is yet small compared with the potential supply of workers. This makes it even more difficult for the man who desires it to obtain a position abroad. The actual work carried on in Venezuela, for instance, would not be much greater than for several major fields of Texas combined. There is not the competition abroad in drilling which calls for the drilling of wells within a few feet or yards of each other. Acreage is for the most part controlled in large blocks, with the result that fewer wells are drilled, with a larger production of oil per well. The actual number of men required to do the work is therefore much smaller for a given number of barrels of oil produced than in the United States. Thus the field of labor in foreign fields is narrowed down considerably.

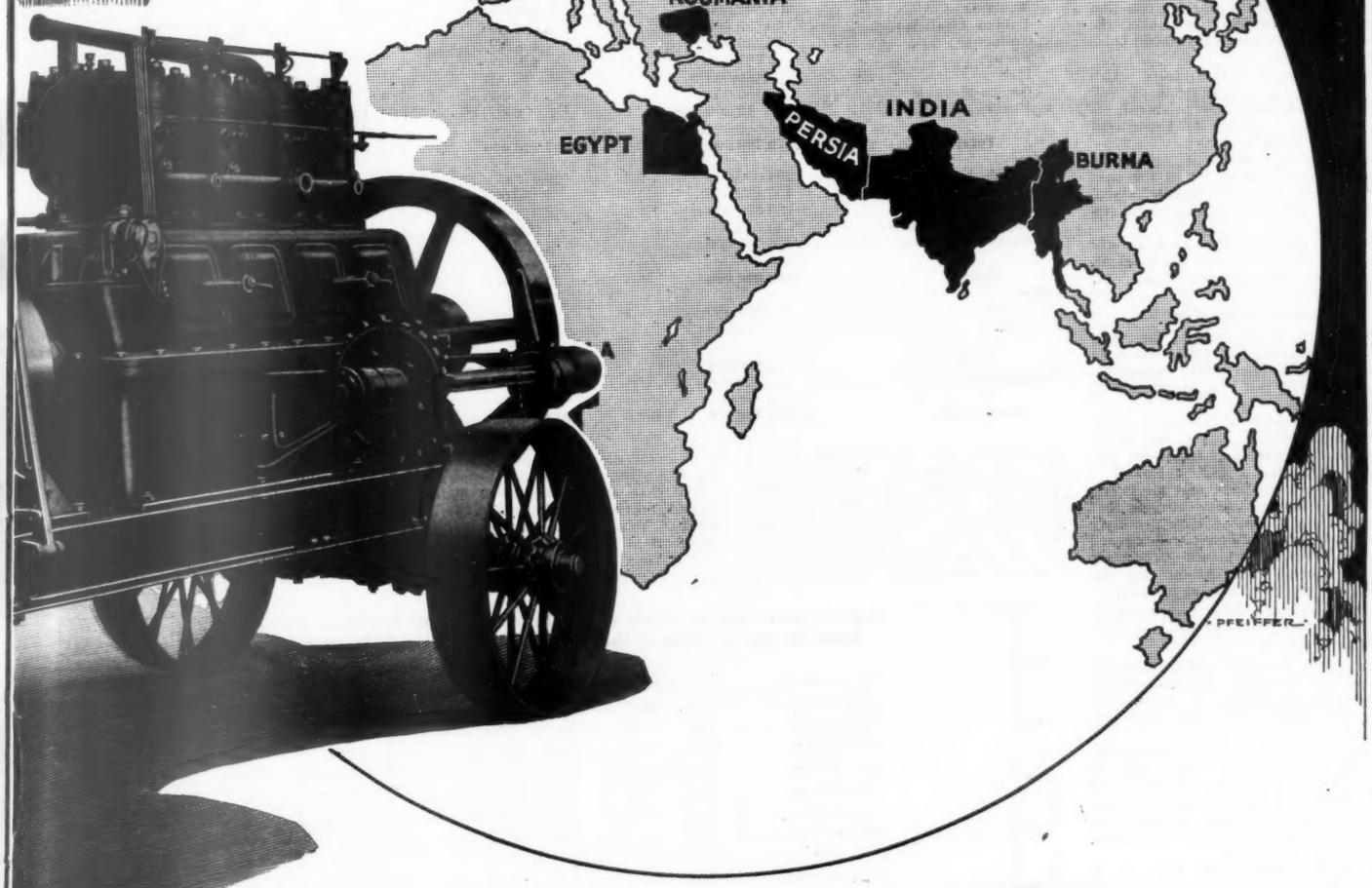
Method of Selection

The method various oil companies have of choosing men for foreign work differs with circumstances. There is no set rule, or "red tape," connected with getting men. As a rule the head office will interview men desiring employment abroad and will recommend applicants as and when they are called upon to do so. But often in foreign fields men are required on the spot. If men are not available on the ground, however, a cable is sent to the home office, say in New York. If men are not available there, they must be sought in domestic oil districts.

An organization carrying on extensive field operations in the United States, as well as abroad, is naturally in close touch with the domestic field labor at all times, and often follows the expedi-

(Continued on Page 190)

THE MAP



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World Production of Crude Petroleum

Various Countries Have Contributed More Than 12,000,000,000 Barrels With the United States Leading

By Charles E. Bowles

To the close of the year 1924 the oil fields of the world had produced a grand total of 12,401,000,000 bbls. of crude oil.

Of this amount the United States had produced 7,906,000,000 bbls., and the other countries of the world 4,495,000,000 bbls.

From the beginning of the oil industry in Rumania, in 1857, to the close of the year 1924 the United States had produced 63.7 per cent of all the oil—and the other countries of the world 36.3 per cent.

In the year 1924 the world production was 1,013,000,000 bbls., of which the United States produced 714,000,000 bbls., or 70.6 per cent.

The continent of Africa, from which it is expected that much crude oil will come in the future, has produced, to date, less than one-tenth of 1 per cent of the world output.

South America, which is certain to produce a great deal of oil in the next few years, has produced, to date, seven-tenths of 1 per cent of the world total.

Asia, with her great Persian fields still in the first stages of real development, has produced slightly over 5 per cent of the world output.

Europe's Production

Europe, with Russia passing her "first peak" of production in 1901 and with her present production slowly increasing, has produced 20 per cent of all the oil to date.

With the oil fields of the world today producing a billion barrels of oil a year—and the markets of the world consuming practically a billion barrels a year of refined products and oil in its crude form—the fact seems obvious that the markets of the world have definitely passed their first "billion-barrels-a-year" milestone. Splendid evidence of the great era of industrial development and expansion we are now passing through.

In this connection it is interesting to note the increasing rate at which we are producing crude oil.

Referring to the graph and its table we find that we produced our first billion barrels in approximately 38 years—just as the first automobiles made their appearance.

It required 7 years and 5 months for our second billion—4 years and 10 months for our third billion—3 years and 10 months for our fourth billion—2 years and 10 months for our fifth—2 years and 5 months for our sixth— and 2 years and 2 months for our seventh.

These first 7,000,000,000 bbls. of oil were produced in 61 years—and bring us down to January, 1918.

Record Since 1918

And in the 7½ years from January, 1918 to July, 1925, the oil fields of the world produced 6,000,000,000 bbls. of oil.

This "first cycle" saw our rate of production decrease from 38 years for the first billion to 2 years and 2 months for our seventh billion.

In our "second cycle" we started with our eighth billion barrels, which required 1 year and 10 months, and ended with our twelfth billion which required almost exactly 1 year.

We are now in our "third cycle"—and produced our thirteenth billion barrels of crude oil in 11½ months.

This means that the oil fields of the world are today producing crude oil at the average rate of 3,000,000 bbls. a day. To visualize this daily production let's imagine that it all ran into 55,000-bbl. tanks. The output, each 24 hours, would fill 54 of these tanks—one tank each 26 minutes. Or, run into tank cars, the stream would fill a tank car each 7 seconds—and a 60-car tank train would pull out of the station every 7 minutes, day and night, throughout the year.

The close of the year 1925 finds the United States with approximately 400,000,000 bbls. of domestic and foreign crude oil in storage. While definite figures are not generally available it is undoubtedly true that there is today a relatively small amount of crude oil in storage throughout the world, outside of the United States.

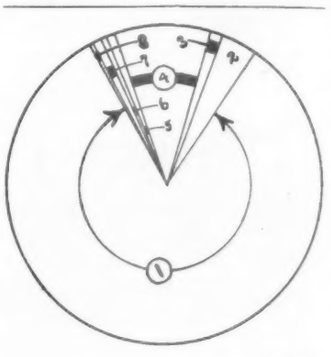
Producing, within our own borders, 70 per cent of the world's crude oil, we imported in 1924 almost 78,000,000 bbls. of crude compared with exports of 18,000,000 bbls. We, therefore "absorbed," last year, a grond total of 764,000,000 bbls. of crude oil—or over 75 per cent of the world's output.

Estimates made for 1923 indicated that "current crude" supply was about 10 per cent in excess of current demand, with world production at 1,019,000,000 bbls. and world demand at 922,000,000 bbls.

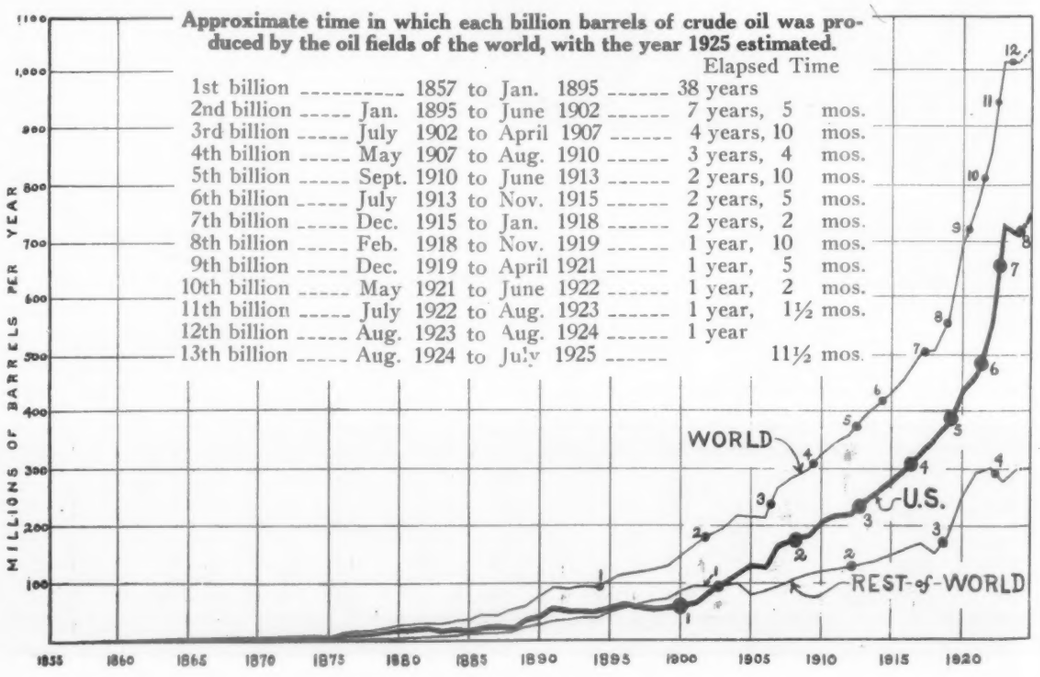
It is entirely conservative to concede an expansion of about 10 per cent in

Table 1—World Production of Crude Oil in 1924 With Production From Beginning of Industry to End of 1924. Shale Oil Production Not Included.

	Bbls. 42 gals.	Per Cent	Bbls. 42 gals.	Per Cent
North America—				
United States	7,905,929,000	63.7	713,940,000	70.6
Mexico	1,201,281,000	9.7	139,497,000	13.8
Canada	25,564,000	.2	164,000	....
West Indies (Trinidad)	23,264,000	.2	4,057,000	.4
Total	**9,156,038,000**	**73.8**	**857,658,000**	**84.8**
South America—				
Argentina	20,421,000	.2	4,669,000	.5
Colombia	1,192,000	....	445,000	....
Peru	52,321,000	.4	7,812,000	.8
Venezuela	17,924,000	.1	8,754,000	.8
Total	**91,858,000**	**.7**	**21,680,000**	**2.1**
Europe—				
Russia	2,053,140,000	16.6	45,312,000	4.5
Rumania	207,842,000	1.7	13,303,000	1.3
Poland (Galicia)	190,633,000	1.5	5,657,000	.6
Germany	16,739,000	.2	406,000	.6
France	2,767,000	.2	426,000	.6
Italy	1,186,000	.2	45,000	.6
Czecho-Slovakia	480,000	.2	75,000	.6
England	12,000	.2	2,000	.6
Total	**2,472,799,000**	**20.0**	**65,226,000**	**6.4**
Asia—				
Dutch East Indies	294,030,000	2.4	20,473,000	2.0
India (Burma)	157,282,000	1.3	8,150,000	.8
Persia	150,619,000	1.2	32,373,000	3.2
Japan and Formosa	49,640,000	.4	1,959,000	.2
Sarawak (British Borneo)	16,505,000	.1	4,163,000	.4
Total	**668,076,000**	**5.4**	**67,118,000**	**6.6**
Africa—				
Egypt	11,758,000	.1	1,122,000	.1
Algeria	71,000	....	12,000	....
Total	**11,829,000**	**.1**	**1,134,000**	**.1**
Miscellaneous	789,000	....	111,000	....
Grand total	**12,401,389,000**	**100.0**	**1,012,927,000**	**100.0**



	Per Cent
1—United States	82.73
2—Rest of North America	3.47
3—South America	1.01
4—Europe	10.10
5—Asia	.83
6—Africa	.53
7—Australia	1.22
8—Oceania	.11
Total	100.00


Approximate time in which each billion barrels of crude oil was produced by the oil fields of the world, with the year 1925 estimated.
Elapsed Time
1st billion ---------- 1857 to Jan. 1895 ------- 38 years
2nd billion ------ Jan. 1895 to June 1902 ------- 7 years, 5 mos.
3rd billion ------ July 1902 to April 1907 ------- 4 years, 10 mos.
4th billion ------ May 1907 to Aug. 1910 ------- 3 years, 4 mos.
5th billion ------ Sept. 1910 to June 1913 ------- 2 years, 10 mos.
6th billion ------ July 1913 to Nov. 1915 ------- 2 years, 5 mos.
7th billion ------ Dec. 1915 to Jan. 1918 ------- 2 years, 2 mos.
8th billion ------ Feb. 1918 to Nov. 1919 ------- 1 year, 10 mos.
9th billion ------ Dec. 1919 to April 1921 ------- 1 year, 5 mos.
10th billion ------ May 1921 to June 1922 ------- 1 year, 2 mos.
11th billion ------ July 1922 to Aug. 1923 ------- 1 year, 1½ mos.
12th billion ------ Aug. 1923 to Aug. 1924 ------- 1 year
13th billion ------ Aug. 1924 to July 1925 ------- 11½ mos.
MILLIONS OF BARRELS PER YEAR
1100
1000
900
800
700
600
500
400
300
200
100
WORLD
U.S.
REST-of-WORLD
1855
1860
1865
1870
1875
1880
1885
1890
1895
1900
1905
1910
1915
1920

world markets for 1924 and for 1925. This growth would place the world demand for refined products and crude oil used in its crude form, for 1924, at approximately a billion barrels—and for 1925 at over a billion barrels.

Measured in terms of barrels, the markets for petroleum products outside of the United States will not expand as rapidly as they do here at home. The yearly "per cent" of increase in other countries, however, will probably be greater than in the United States as the industrial expansion of our leading foreign countries is sure to go on very rapidly.

Some idea of the relative rate at which the production of crude oil has been increasing in the United States and outside of the United States can be had from the accompanying tabulation.

Table 2—Crude oil production of the United States and of the rest of the world from the beginning of the industry to the end of 1924, and by 5-year periods thereafter. with 1925 estimated:

	United States	Rest of World
To end 1895	706,113,000	394,650,000
1896-1900 ...	297,492,000	343,963,000
1901-1905 ..	510,415,000	466,752,000
1906-1910 ..	863,844,000	525,135,000
1911-1915 ..	1,238,697,000	683,032,000
1916-1920 ..	1,813,307,000	901,271,000
1921-1925 ..	3,226,061,000	1,480,657,000
Total	8,655,929,000	4,795,460,000

On the basis of 5-year periods, we are producing crude oil in the United States today 11 times as fast as when the automobile was in its infancy—6 times as fast as when Glenn Pool was discovered—and nearly twice as fast as during the period that marked the close of the World War.

In studying the increases in production between these succeeding 5-year periods we note an "acceleration," both in the United States and in the other countries, that is ominous—if it continues at its present rate and, at the same time, world markets fail to expand with it.

This amazing and ominous acceleration in the rate of crude oil production is clearly shown by Table 3, which has been compiled from Table 2.

Table 3—Increase in production by 5-year periods. Amounts in "round numbers:"

Period—	United States	Other Countries
1901-1905	213,000,000	123,000,000
1906-1910	353,000,000	59,000,000
1911-1915	375,000,000	158,000,000
1916-1920	575,000,000	218,000,000
1921-1925 1,413,000,000		579,000,000

Areas of Big Increases

In searching about for the unusual increases in production during the 1921-1925 period we find that Mexico alone increased her production more than 475,000,000 bbls. over her 1916-1920 output. Therefore, the net increase, in 1921-1925, of all of the other foreign countries was about 100,000,000 bbls.

In checking up the production of the major producing areas of the United States for the 1921-1925 period we find that the great bulk of the increase came from the Mid-Continent and California with a relatively small increase from the Rocky Mountain area.

Should the 1926-1930 period reveal that Mexico passed her peak in 1921 it is quite possible that Mexico's production, plus other foreign countries, will not show a 500,000,000-bbl. increase over 1921-1925.

And it is much more possible that in the 1926-1930 period the oil fields of the United States will not be called upon to show an increase of 1,400,000,000 bbls. over the 1921-1925 output.

At the close of the year 1925, as we look back over the last 5 years with their amazing increases in output, the conclusion seems inescapable that, in the 1926-1930 period, the industry will slowly continue its evolution in the solution of the really economic relation between the production of crude oil and the amount run to stills. And this "progressive solution" of the oil industry's greatest problem should be, and will be, worked out by the industry itself. And, in working it out, the industry will make its greatest contribution to real "conservation"—the public, who use its products, will have to contribute their part through conservative use.

Large Refining Area

In considering the relation between the points at which crude oil is produced and the points at which it is refined and marketed we find that a large part of the surplus crude that has been produced in Mexico and in South American countries has found its way to the United States. In a general way this will probably continue, especially as the oil producing countries of the Eastern Hemisphere will very likely produce an increasing proportion of their requirements.

About the only effect that oil produced in Russia, Persia, Burma and the Dutch East Indies will have on the American industry will be to retard the growth of foreign markets for our refined products. Exports of crude oil from the United States have never been a large factor in comparison with our production plus imports. Last year's exports were about 2 per cent of our total crude supply.

In the following tables the production of the five leading countries of the Western Hemisphere and of the Eastern Hemisphere is given for the last five years—and it is very probable that the oil fields of either national or international importance that will be found and developed in the next several years will

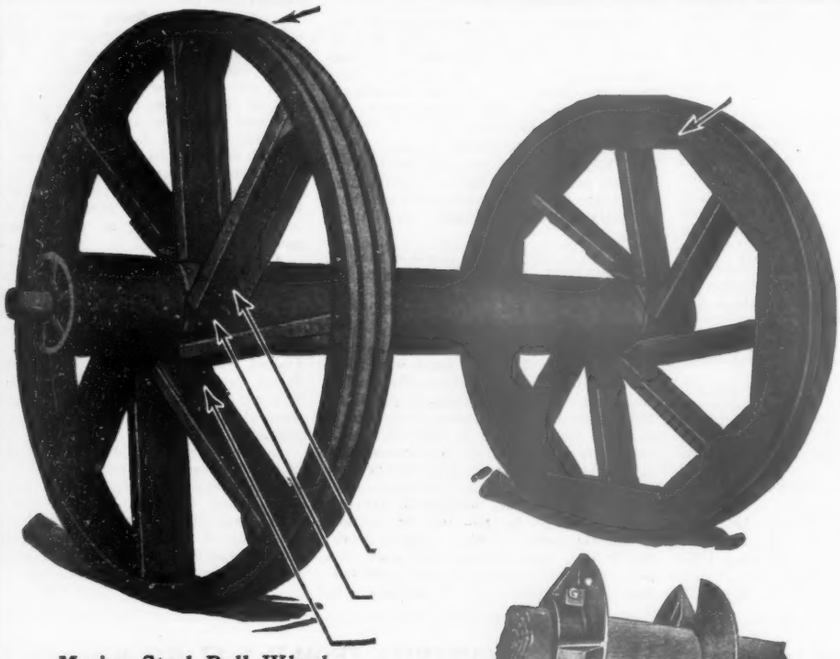
(Continued on Page 130)

WORLD'S PRODUCTION OF CRUDE PETROLEUM, 1857-1924, BY YEARS AND COUNTRIES, FROM U. S. GEOLOGICAL SURVEY

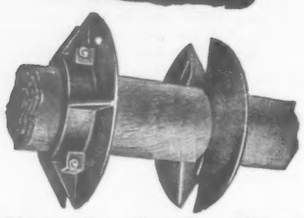
(Thousands of barrels of 42 U. S. gallons.)

Year	Rumania	United States	Italy	Canada	Russia	Poland (Galicia)	Japan and Formosa	Germany	India	Dutch East Indies	Peru	Mexico	Argentina	Trinidad	Egypt	Persia	Sarawak (Bt. Borneo)	Venezuela	France	Czecho-Slovakia	Colombia	Other Countries	Total for Year	Total Since 1857
1857	2	.....	....	....	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	2	2
1858	4	.....	....	....	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	4	6
1859	4	2	....	....	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	6	12
1860	9	500	*....	....	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	509	521
1861	17	2,114	*....	....	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	2,131	2,652
1862	23	3,067	*....	12	.....	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	3,092	5,744
1863	28	2,611	*....	83	41	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	2,763	8,507
1864	33	2,116	*....	90	65	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	2,304	10,811
1865	39	2,498	2	110	67	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	2,716	13,527
1866	42	3,593	1	175	83	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	3,899	17,426
1867	51	3,347	1	190	120	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	3,709	21,135
1868	56	3,646	*....	200	88	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	3,990	25,125
1869	59	4,215	*....	220	202	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	4,696	29,821
1870	84	5,261	*....	250	204	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	5,799	35,620
1871	90	5,205	*....	270	165	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	5,730	41,350
1872	91	6,293	*....	308	185	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	6,877	48,227
1873	104	9,894	*....	365	475	.....	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	10,838	59,065
1874	103	10,927	1	169	583	150	....	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	11,933	70,998
1875	108	8,788	1	220	697	158	5	....	....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	9,977	80,975
1876	111	9,133	3	312	1,321	164	7	....	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	11,051	92,026
1877	108	13,350	3	312	1,801	170	10	....	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	15,764	107,786
1878	109	15,397	4	312	2,401	176	18	....	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	18,417	126,197
1879	110	19,914	3	575	2,761	215	23	....	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	23,601	149,798
1880	115	26,286	2	350	3,001	239	26	9	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	30,018	179,816
1881	122	27,661	1	275	3,601	287	17	29	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	31,993	211,809
1882	136	30,350	2	275	4,538	330	15	58	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	35,704	247,513
1883	139	23,450	2	250	6,002	365	20	27	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	30,255	277,768
1884	211	24,218	3	250	10,805	408	28	46	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	35,969	313,737
1885	193	21,859	2	260	13,925	465	30	41	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	36,765	350,502
1886	168	28,065	2	584	18,006	306	38	74	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	47,243	397,745
1887	182	28,283	1	526	18,368	344	29	74	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	47,807	445,552
1888	219	27,612	1	695	23,049	467	37	85	.....	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	52,165	497,717
1889	298	35,164	1	705	24,609	515	53	68	94	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	61,507	559,224
1890	383	45,824	3	795	28,691	659	52	108	118	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	76,633	635,857
1891	488	54,293	8	755	34,573	631	53	109	190	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	91,100	726,957
1892	593	50,515	18	740	35,775	646	69	101	242	.....	.....	.....	....	....	....	.....	....	....	....	....	....	....	88,739	815,696
1893	535	48,431	19	798	40,457	693	106	100	299	600	.....	.....	....	....	....	.....	....	....	....	....	....	....	92,038	907,734
1894	508	49,344	21	829	36,375	949	173	123	327	688	.....	.....	....	....	....	.....	....	....	....	....	....	....	89,337	997,071
1895	576	52,892	26	726	46,140	1,453	170	121	372	1,216	.....	.....	....	....	....	.....	....	....	....	....	....	....	103,692	1,100,763
1896	543	60,960	18	727	47,221	2,444	237	145	430	1,427	47	.....	....	....	....	.....	....	....	....	....	....	....	114,199	1,214,962
1897	571	60,476	14	710	54,399	2,226	262	166	646	2,552	71	.....	....	....	....	.....	....	....	....	....	....	....	121,993	1,338,955
1898	776	55,264	15	758	61,610	2,376	319	184	542	3,964	71	.....	....	....	....	.....	....	....	....	....	....	....	124,979	1,461,934
1899	1,426	57,071	16	808	65,955	2,314	539	192	941	1,796	89	.....	....	....	....	.....	....	....	....	....	....	....	131,147	1,593,081
1900	1,629	68,621	12	913	75,780	2,347	871	358	1,079	2,253	274	.....	....	....	....	.....	....	....	....	....	....	....	149,137	1,742,218
1901	1,678	69,389	16	757	85,168	3,251	1,117	314	1,431	4,014	275	10	....	....	....	.....	....	....	....	....	....	†20	167,440	1,909,658
1902	2,060	88,767	19	531	80,540	4,142	996	354	1,617	2,430	287	40	....	....	....	.....	....	....	....	....	....	†26	181,809	2,091,467
1903	2,763	100,461	18	487	75,591	5,235	1,209	446	2,610	5,770	278	75	....	....	....	.....	....	....	....	....	....	†36	194,879	2,286,346
1904	3,599	117,081	26	563	78,537	5,947	1,219	637	3,385	6,508	290	126	....	....	....	.....	....	....	....	....	....	†40	217,948	2,504,294
1905	4,421	134,717	44	634	54,960	5,766	1,347	561	4,137	7,850	373	251	....	....	....	.....	....	....	....	....	....	†30	215,091	2,719,385
1906	6,378	126,494	54	569	58,897	5,468	1,564	579	4,016	8,181	531	502	....	....	....	.....	....	....	....	....	....	†30	213,263	2,932,648
1907	8,118	166,095	60	789	61,851	8,456	1,718	757	4,344	9,983	751	1,005	*....	....	....	.....	....	....	....	....	....	†30	263,957	3,196,605
1908	8,282	178,527	51	528	62,187	12,612	1,871	1,009	6,047	10,283	945	3,933	12	*....	....	.....	....	....	....	....	....	†20	285,287	3,481,892
1909	9,327	183,171	42	421	65,970	14,933	1,887	1,019	6,677	11,042	1,411	2,714	18	57	....	.....	....	....	....	....	....	†20	298,709	3,780,601
1910	9,724	209,557	51	316	70,237	12,673	1,829	1,032	6,138	11,031	1,258	3,634	20	143	....	.....	....	....	....	....	....	†20	327,763	4,108,364
1911	11,108	220,449	75	291	66,184	10,519	1,737	1,017	6,451	12,173	1,465	12,553	13	285	21	.....	....	....	....	....	....	†20	344,361	4,452,725
1912	12,976	222,935	54	243	68,019	8,535	1,659	1,031	7,117	10,846	1,752	16,558	47	437	214	.....	....	....	....	....	....	†20	352,443	4,805,168
1913	13,555	248,446	47	228	62,834	7,818	1,940	857	7,930	11,172	2,071	25,696	131	504	98	1,857	141	....	....	....	....	†20	385,345	5,190,513
1914	12,827	265,763	40	215	67,020	6,436	2,636	781	7,410	11,422	1,837	26,235	276	644	753	2,910	318	....	....	....	....	†21	407,544	5,598,057
1915	12,030	281,104	44	215	68,548	5,352	2,928	703	8,202	11,920	2,579	32,911	516	750	212	3,616	392	....	....	....	....	†14	432,036	6,030,093
1916	8,945	300,767	51	198	65,817	6,587	2,963	656	8,491	12,547	2,592	40,546	797	929	404	4,477	629	....	....	....	....	†33	457,430	6,487,523
1917	3,721	335,316	41	214	63,072	6,228	2,861	642	8,079	13,180	2,577	55,293	1,145	1,602	943	7,147	542	120	....	....	....	‡8	502,751	6,990,274
1918	8,730	355,928	35	305	27,168	6,032	2,441	270	8,188	12,778	2,527	63,828	1,243	2,082	1,935	8,623	504	333	‡633	....	....	†7	503,326	7,493,594
1919	6,618	378,367	35	241	31,752	6,096	2,238	265	8,736	15,508	2,628	87,073	1,332	1,841	1,517	10,139	596	425	334	48	....	†5	556,796	8,049,390
1920	7,435	442,929	35	196	25,430	5,607	2,221	246	8,375	17,529	2,817	163,540	1,657	2,083	1,042	12,230	1,020	487	356	69	....	†4	695,281	8,744,671
1921	8,368	472,183	32	188	28,968	5,167	2,233	274	8,734	16,958	3,699	193,398	2,061	2,354	1,255	16,673	1,411	1,433	389	94	....	†56	765,928	9,510,599
1922	9,843	557,531	31	179	35,692	5,227	2,055	319	8,529	16,720	5,314	182,278	3,018	2,445	1,188	22,247	2,849	2,201	496	120	323	†110	858,715	10,369,314
1923	10,867	732,407	34	170	39,156	5,373	1,789	312	8,320	19,868	5,699	149,585	3,400	3,051	1,054	28,793	3,940	4,059	403	74	424	122	1,018,900	11,388,462
1924	13,303	713,940	45	164	45,312	5,657	1,959	406	8,150	20,473	7,812	139,497	4,669	4,057	1,122	32,373	4,163	3,754	426	75	445	125	1,012,927	12,401,389
Total ..	207,842	7,905,929	1,186	25,564	2,053,140	190,633	49,640	16,739	157,282	294,030	52,321	1,201,281	20,421	23,264	11,758	150,619	16,505	17,924	2,767	480	1,192	872		

*Less than 1 thousand. †Estimated. ‡Cuba. §Production in previous years credited to Germany.

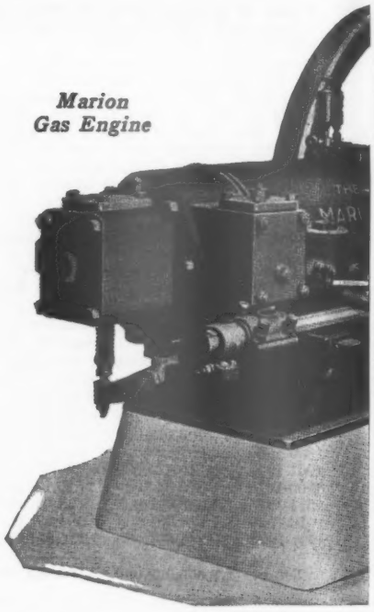


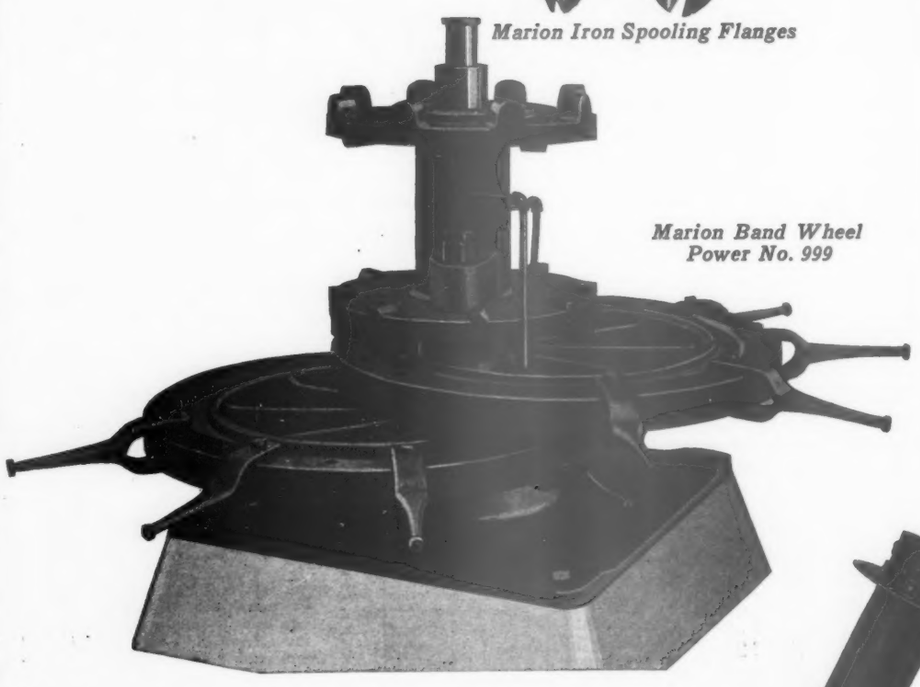
Marion Steel Bull Wheel



Marion Iron Spooling Flanges

Marion Gas Engine





Marion Band Wheel Power No. 999

It's Team Work That

A draft horse and gasoline tractor have power, but they don't "hit it off" well when hitched together. They don't usually synchronize; however, two drafts pulling together are "some horses" and a single tractor is "a bear for eating up work."

Because there is great economy and volume attained by using one make of standardized machinery, we offer a large line of *metal* equipment for the oil fields.

The following Bulletins will tell you about it. Any of these will be mailed to you on request.

Marion Machine, Foundr

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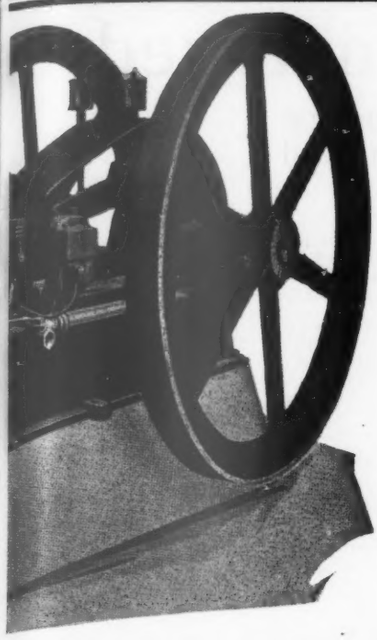

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Marionhill Pitman

Turns the Trick

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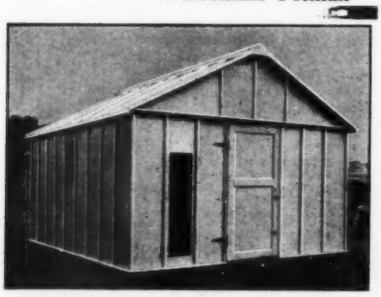
No. 206 Marion Sand-Roof Working Barrel
No. 214 Marion Hi-Test Sucker Rods
No. 217 Marionhill Pitmans
No. 230 Marion Metal Buildings

Use the Marion Line of Oil Well Machinery and know what it means to get full production through the principle of team work.

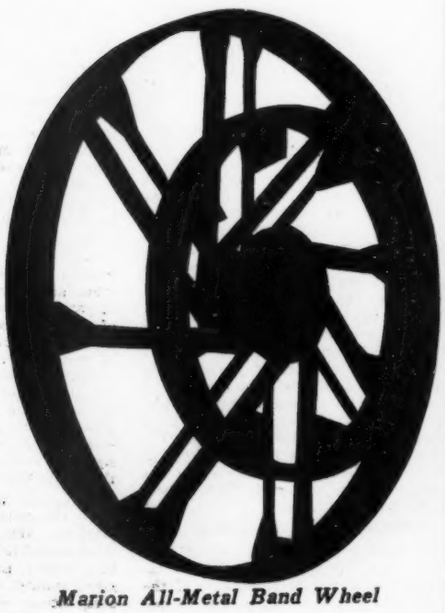
y & Supply Co., Marion, Indiana

Marion Hi-Test Sucker Rods
(Name registered)



Marion Metal Buildings for the Oil Fields

Marion Steel Crown Block



Marion All-Metal Band Wheel

Foreign Oil Resources Summarized

One of the Most Complete Pictures of the World's Petroleum Situation Presented by Student of Fields and Output Abroad

By K. G. Mackenzie*

Although crude oil was sold as a patent medicine in the 1820's, it was not until 1859 that Drake drilled the first oil well in Titusville, and it is particularly interesting that the principal incentive which led to the drilling of this first oil well was Silliman's classic investigation of a sample of surface oil, which indicated the valuable uses to which this oil could be put. While today it is a favorite pastime to bewail the lack of chemistry in the petroleum industry, it should be remembered at least, that the start of this industry was due to a chemist.

It will be noted in Table I that the increase in production in the United States was very gradual, and it was not until the year 1916, when the production reached 300,000,000 bbls. that production began to increase by leaps and bounds, the production in 1924 being considerably more than twice that of 1916.

World Production

With the exception of such gasoline as has been obtained from the Mexican crudes, and such as is now being produced from Venezuelan crude, practically all of the gasoline produced in this country from crude petroleum has been from domestic crudes. The time, however, undoubtedly will arrive when it will be necessary for us to avail ourselves of foreign crudes. In this study, therefore, the world production as compared with the United States production is of interest.

TABLE I
United States Production
(In thousands of barrels of 42 U. S. gallons.)
1857 to 1925

Yr.	Prod.	Yr.	Prod.	Yr.	Prod.
1857	.....	1880	26,286	1903	100,461
1858	.....	1881	27,661	1904	117,081
1859	2	1882	30,350	1905	134,718
1860	500	1883	23,460	1906	126,494
1861	2,114	1884	24,218	1907	166,095
1862	3,057	1885	21,859	1908	178,527
1863	2,611	1886	28,065	1909	183,171
1864	2,116	1887	28,283	1910	209,557
1865	2,498	1888	27,612	1911	220,449
1866	3,598	1889	35,164	1912	222,935
1867	3,347	1890	45,824	1913	248,446
1868	3,646	1891	54,293	1914	265,763
1869	4,215	1892	50,515	1915	281,104
1870	5,261	1893	48,431	1916	300,767
1871	5,025	1894	49,345	1917	335,316
1872	6,293	1895	52,892	1918	355,928
1873	9,894	1896	60,960	1919	378,367
1874	10,927	1897	60,476	1920	442,929
1875	8,788	1898	55,364	1921	472,183
1876	9,133	1899	57,071	1922	557,531
1877	13,350	1900	63,621	1923	732,407
1878	15,397	1901	69,389	1924	713,940
1879	19,914	1902	88,767	1925*	728,410

Total production up to and including 1924, 7,905,931.

*Estimated from the first 5 months' production.

While the increase in world production, it will be observed (see Table II) has been somewhat more uniform than in the United States, it is, nevertheless, seen that the ratio of 1916 on also holds here. This is, of course, to be expected, since the United States has produced a very large percentage of the total world production, varying from 99 per cent in 1861 to 41 per cent in 1901, and amounting to 70 per cent for the year 1924. Whereas, the trend has remained fairly constant for a number of years, or indeed has shown a slight upward curve, the prospects of increased foreign production point to the probability of a gradual decrease in this percentage. The total world production through 1924 has been 12,409,854,000 bbls. of which the United States contributed 7,905,931,000 bbls., or 63.7 per cent. . . .

Foreign Future Production

The world's production for the year 1924 is shown in Table III, Mexico being the largest producer, outside of the United States, producing nearly 14 per cent of the total world production. This is followed by Russia, Persia, Dutch East Indies, Rumania, Venezuela, India and Peru.

TABLE II
World's Production
In thousands of Barrels of 42 U. S. Gallons.
1857 to 1924

1857	2	1880	30,018	1903	194,880
1858	4	1881	31,993	1904	218,204
1859	6	1882	35,704	1905	215,292
1860	509	1883	30,255	1906	213,415
1861	2,131	1884	35,969	1907	264,245
1862	3,092	1885	36,765	1908	285,553
1863	2,763	1886	47,243	1909	298,616
1864	2,304	1887	47,807	1910	327,938
1865	2,716	1888	52,165	1911	344,174
1866	3,899	1889	61,507	1912	352,447
1867	3,709	1890	76,633	1913	383,547
1868	3,990	1891	91,100	1914	403,746
1869	4,696	1892	88,739	1915	427,740
1870	5,799	1893	92,038	1916	459,413
1871	5,730	1894	89,336	1917	508,687
1872	6,877	1895	103,663	1918	514,729
1873	10,838	1896	114,159	1919	555,796
1874	11,933	1897	121,949	1920	695,281
1875	9,977	1898	124,925	1925	765,928
1876	11,051	1899	131,144	1922	868,715
1877	15,754	1900	149,132	1923	1,017,100
1878	18,417	1901	167,434	1924	1,012,927
1879	23,601	1902	182,006		

Mexico

The past production in Mexico is shown in Table IV. The Mexican fields are noted as having the largest single producing wells in the world, one well having produced between 90,000,000 and 100,000,000 bbls. over a period of nine years, still another producing over 70,000,000 bbls. over a slightly longer period. The Mexican production by individual wells has always had a very great element of uncertainty, due to the tendency of these wells to go to water. However, the decrease in production, which has been noted in the last three years, has not been due so much to water encroachment or exhaustion, as to Government interference. It is the general belief that Mexico still contains large reserves, although increased production in the immediate future is very largely hampered by the Government attitude.

TABLE III
United States and Foreign Production, 1924
(In thousands of barrels of 42 U. S. gallons.)

		Pct.
United States	713,940	70.5
Mexico	139,497	13.8
Russia	45,312	4.5
Persia	32,373	3.2
Dutch East Indies	20,473	2.0
Rumania	13,303	1.3
Venezuela	8,754	0.9
India	8,150	0.8
Peru	7,812	0.8
Poland	5,657	0.5
Argentina	4,669	0.4
British Borneo (Sarawak)	4,163	0.4
Trinidad	4,057	0.4
Japan, Taiwan (Formosa)	1,959	0.2
Egypt	1,122	
Colombia	445	
France	426	
Germany	406	
Canada	164	
Czechoslovakia	75	0.3
Italy	45	
Algeria	12	
Barbados	10	
Cuba	4	
England	2	
Miscellaneous	97	

TABLE IV
Mexico Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Prod.	Year	Prod.
1901	10	1913	25,696
1902	40	1914	26,236
1903	75	1915	32,911
1904	126	1916	39,817
1905	251	1917	55,293
1906	503	1918	63,828
1907	1,005	1919	87,073
1908	3,933	1920	163,540
1909	2,714	1921	193,398
1910	3,634	1922	182,278
1911	12,553	1923	149,586
1912	16,558	1924	139,497

Russia

The Russian production by years is shown in Table V. It may be noted that the Russian production reached a maximum in the year 1902, and varied somewhat below this maximum figure until 1917, when production dropped off markedly, due not only to the Bolshevik regime, but also to war conditions and foreign invasion. Since then this production has been almost entirely in the hands of the Soviet Government, but in spite of this handicap, Russia holds third place in the world's production in 1924, and it is estimated that the Russian production for the fiscal year ending September, 1925, will be approximately 50,000,000 bbls. It should be said, in credit to the Soviet Government that not only is production increasing, but oil is being produced more economically. Immediate increase in production will depend, of course, entirely on the attitude of the Soviet Government. Transportation, also, is handicapped and here again, the Government attitude will be the controlling factor.

TABLE V
Russia Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Yr.	Prod.	Yr.	Prod.	Yr.	Prod.
1863	41	1884	10,805	1905	54,960
1864	65	1885	13,925	1906	58,897
1865	67	1886	18,006	1907	61,851
1866	83	1887	18,368	1908	62,186
1867	120	1888	23,049	1909	65,970
1868	88	1889	24,609	1910	70,337
1869	202	1890	28,691	1911	66,184
1870	205	1891	34,573	1912	68,019
1871	165	1892	35,775	1913	62,834
1872	184	1893	40,457	1914	67,021
1873	474	1894	36,375	1915	68,548
1874	584	1895	46,140	1916	65,817
1875	697	1896	47,221	1917	63,072
1876	1,321	1897	54,400	1918	27,168
1877	1,801	1898	61,609	1919	21,752
1878	2,401	1899	65,955	1920	25,420
1879	2,761	1900	75,779	1921	28,968
1880	3,001	1901	85,169	1922	35,692
1881	3,601	1902	80,540	1923	39,156
1882	4,538	1903	75,591	1924	45,312
1883	6,002	1904	78,537		

Russia is immensely rich in petroleum reserves. It has three fields of over 1,000 acres area each, which have each produced over 200,000 bbls. of oil per acre. Colubiatnikoff, a Russian geologist, has estimated that the Apscheron Peninsula, having an area not over 1,200 square miles, has an oil reserve of 11,500,000,000 bbls., which is approximately twice the

(Continued on Page 191)

*Consulting Chemist, The Texas Co. Abstract of paper presented at American Chemical Society meeting and printed by permission of Journal of Industrial & Engineering Chemistry.

COUNTRY BY COUNTRY ANALYSIS

A country-by-country analysis of foreign petroleum resources is made in the accompanying article by Dr. Mackenzie, and is one of the most complete pictures that has been presented in recent years. The article herewith reproduced contains only a portion of Dr. Mackenzie's complete paper which dealt on "Petroleum Aspects of Conservation" and was presented as part of a symposium on the motor fuel problem before the American Chemical Society. Other portions of Dr. Mackenzie's paper have been previously presented in The Oil and Gas Journal. Permission to publish the accompanying article was obtained from Dr. Mackenzie and the Journal of Industrial and Engineering Chemistry. Dr. Mackenzie gives acknowledgment to A. C. Hunter and J. T. Duce, of The Texas Co., for aiding in the preparation of the data given.

EUROPEAN CONSUMPTION SUBNORMAL EVEN WITH MATERIAL INCREASE

By Edward Prizer
Chairman of Board, Vacuum Oil Co.

While there has been a material increase in the export of petroleum products this year to foreign markets, the consumption abroad, particularly in Europe, is still subnormal on any fair basis of per capita consumption in comparison with the United States. This is due to economic conditions. It cannot be expected that while industry is prostrated, financial conditions are strained, and general scale of living at a low rate, that any equivalent development will speedily occur similar to that which is raising in larger and larger volume the home consumption.

The utility of the motor-driven vehicle needs no particular advocate in foreign countries. The value of the motor car, truck and tractor is recognized. Increase of earning power, not alone on the part of industry, but the common people as a whole, would result in a great increase of motor operation. The present outlook is that progress in that direction will be steady but not rapid. However, there is no reason to believe that the overseas consumption of petroleum will not increase, and, therefore, the volume that may be expected next year will be larger than this year.

It is not wise, however, to overestimate the consumptive ability of foreign markets. Mistaken opinions as to the total available business in not a few cases has caused an excess of export to a given market, with consequent aggressive competition and unwise price-making, which has resulted in losses to exporters who have not created years ago established channels of distribution.

While it will be a long time before any parity of consumption between foreign markets and the United States can be looked for, it is reasonable to assume that foreign requirements must increase

Edward Prizer

with the improvement of economic conditions, and a consequent increase of all forms of human activity in connection with which petroleum is the vital factor.

d Fittings

Requirement

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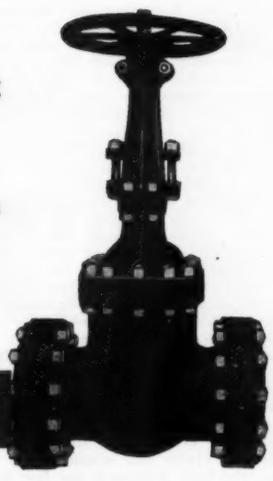

d Machine Co., Pittsburgh, Penna.

Mexico's Output 25,000 Barrels Less

But Wells Show a Remarkable Tendency to Hold on to Production and There Has Been Little Real Wildcatting Recently

By George Blardone

TAMPICO, Mex., Dec. 24.—To present an optimistic picture of petroleum in Mexico as 1925 draws to a close would be an exaggeration. On the other hand, to be precisely a pessimist would be to ignore certain facts of the present and not a little past history. That the gross optimism of the so-called "boom days" leads to strenuous reactions is undeniable. That the petroleum boom for Mexico, in its Tampico-Tuxpam embayment—a boom which gathered real impetus in 1917 and was destined to reach its apex in 1921—belongs to a past that can hardly be repeated anywhere, is now regarded among the initiated as a truism.

Consider some details regarding production in Mexico in 1925, or until the end of October of this year. The first six months of the year saw a production of say 65,797,583 bbls., a decrease from production in the first six months of 1924 of 8,264,210 bbls. This, too, despite strenuous drilling, especially in the northern fields (heavy oil district). Many good wells were brought in during this period, but they were not discovery wells—to speak broadly—and drilled, as most of them were, in well defined existent pools, they commenced, in many instances to go early to water. Then, too, older wells either slacked down in production or, having produced their all, quit entirely. Hence, despite good completions in this period, the production curve wavered along between 10,500,000 bbls. a month to say the apex month, March, when the production was 11,742,045 bbls. Then came June and with it the first drop in several years of under 10,000,000 bbls. a month (June, 9,967,246).

Since then the production curve has never gone over 8,500,000 bbls. plus. In September it went under 8,000,000 bbls., but recovered say a half million barrels in October, going back a little over 8,000,000 bbls.

In Table Form

Reduced to table form, production of light and heavy oil in Mexico for the first eight months of the present year is substantially as follows:

Light	31,135,794
Heavy	66,932,958
Total eight months	98,068,752

To the above figures an approximate production for November and December of say 16,500,000 bbls. can be added. This will give an estimated total production for 1925 of 114,568,752, or a decrease in production from 1924 of approximately 25,000,000 bbls. The only shut-in reserves in Mexico at this time belongs to Pan American Eastern's two subsidiaries, and some oil of the National Lines that the latter has not yet had time to furnish transport for.

Production in Mexico increased steadily for several years up to its apex in 1921 when 202,762,527 bbls. was brought above ground. In the next year it fell off 18,342,842 bbls.; in 1923 the production loss was quite heavy, being 32,649,685 bbls., and 1924 showed a production loss from 1923 of 12,697,975 bbls.

These production losses since 1921 do not look encouraging. They are not. But the fact remains that some Mexican wells, even in salt water areas, show a tendency to hold on to production with commendable tenacity; further, every effort is being made by producers to conserve production in every way possible and to "strip" the little fellows to the last barrel if they can do so without incurring an actual loss thereon. The older fields are being carefully combed over with the drill. For the past two years there has been very little wildcatting except, to speak generally, in sectors close to existent productive fields.

Vessel Shipments

Petroleum and its products destined for the export trade from Mexico are vessel shipments. Production of petroleum in Mexico during the first years of the World War curtailed owing to the lack of tankers, production then being keyed to fit in exactly with the number of tankers that could be made available. With the end of the war and with more tankers available, coupled with extending markets, shipments gradually ascended until along in the spring of 1921 as much as 19,000,000 bbls. a month was dispatched from the three ports of primary clearance, Tampico, Port Lobos and, farther south, Tuxpam. With the gradual decline in shipments. Thus in 1924 the vessel movement totaled 132,793,390 bbls., a decline of 7,998,914 bbls. from the 1923 movement. For the eight months of 1925, ending with the close of October, the movement totaled 89,033,660 bbls., shipments having dropped the last few months of the eight under discussion to less than 7,000,000 a month.

Of the movement of 89,000,000 bbls. for the eight months of the year current Tampico cleared 86,617,719 bbls.; Tuxpam, once a major factor in south fields (light) crude exports cleared only 1,724,339 bbls., and Port Lobos, in between Tampico and Tuxpam, accounted for only 691,602 bbls., making its last shipments in August. Both Tuxpam and Port Lobos loaded through sea loading lines; Tampico, its habor being a river harbor, loads directly at docks. Nearly all south fields crude comes to Tampico through pipe lines, as does northern fields crude, river transport from the latter by way of the Panuco River, now being almost entirely discarded.

Classes Exported

The first eight months' movement consisted of 57,156,135 bbls. of heavy, 31,877,525 bbls. of light. By classes this crude and its products were divided as follows: Crudes, 49,716,269; topped crudes (fuel oil), 30,193,279; distillates, some illuminants and gas oil, but nearly all gasoline, 4,742,567, and to these figures an item of bunkering is added to balance of say 4,381,545. The first six months' vessel movement figures showed a decline from the same period in 1924 of 9,915,553 bbls.

The great bulk of Mexican oil exportations has always, and continued so to do, gone to the United States. Thus for the eight months under discussion that country received 62,953,326 bbls. The remainder finds its way principally now to Cuba (fuel oil); to United Kingdom and the Continent (fuel and refined); to South America (fuel and refined), and say Central America (fuel) and Canada. The latter is usually crude.

Some small volume of this vessel movement goes coastwise and is used domestically, but one-half of the coastwise movement will probably find its way abroad eventually. The shipments referred to are all bulk tanker cargoes, no case goods being shipped for export, at least from these three primary ports of clearance.

In 1923, owing to the steady production loss it was incurring, Mexican Eagle Oil Co., Ltd., commenced importing crude for its Tampico refinery from California. The importations ran 4,141,692 bbls. that year. This was the first time since 1912 that crude oil was imported, tanker lots, by Mexico. These importations have declined somewhat, and this year will probably see no more than 1,000,000 bbls. so imported.

Refineries

The first attempt to really refine petroleum in Mexico was in Vera Cruz in 1886, when an American company constructed a small, two still affair with a charging capacity of 500 bbls. Its purpose was to refine for illuminants, lubricants, greases and paraffin for the domestic trade. Its oil came from Pennsylvania, possibly in barrels, as tank steamers were not so well known then, (Note: I believe the first tanker was constructed in Europe in that year, but tankers were not in general use until much later.) This company used the trade-mark: "El Aguila" (The Eagle) for its goods, the mark that now distinguishes Mexican Eagle Oil Co.'s output. The following year (1887) the then Waters, Pierce Oil Co., also constructed a small refinery of similar crude capacity at Vera Cruz. The first outfit shortly afterwards sold out to Waters, Pierce. The latter, also importing crude, commenced putting refined products on the Mexican market under its present trade name "El Gallo" (The Rooster). That saw the commencement of refining in Mexico.

In 1898 Waters, Pierce (Pierce Oil Corp. of Mexico now) finished its plant at Tampico. This is a completed refinery of 10,000 bbls. charging capacity. It also has an asphalt plant that it completed in 1917, but has made little use of it. This plant, also, ran on crude imported from the United States until 1912 when crude importations, owing to the rising tide of Mexican production, stopped. By 1908 Mexican Eagle Oil Co., Ltd., finished its plant at Minititlan, in the Isthmus of Tehuantepec, a complete refinery with a charging capacity of 15,000 bbls. The promising Isthmus production faded out over night, to adopt the vernacular, and this plant ran for a while on crude from the United States until it could be furnished with crude from the famous No. 4 Potrero del Llano, loading arrangements (sea loading lines) being perfected at Tuxpam some time in 1912.

Larger Plants

In 1914, Mexican Eagle Oil Co. completed its big refinery at Tampico, a plant that can now skim 60,000 bbls. a day. It, too, is a full refinery manufacturing everything petroleum can yield. In the same year Standard of New Jersey finished a small skimming plant, and this plant can run 12,000 to 15,000 bbls. a day. The following year saw Huasteca Petroleum Co. complete the first units of its big plant, aiming at first to skim only South Fields crude. This plant has been steadily enlarged until today it can top, under continuous distillation, say 130,000 bbls. a day, marking it as it is said to be the largest plant of the kind in the world. Huasteca some two years later made a full refinery of this plant and today it refines gasoline, makes lubricants, greases—in short, everything. This plant is Mexico's largest refinery at this time. Along in 1918 Mexican Eagle Oil Co. constructed a topping plant at Tuxpam bar that can run 10,000 bbls. a day. The same year saw The Texas Co.

(Continued on Page 134)

UNIVERSITY AND INDUSTRIAL MEN TO BE ENLISTED IN OIL RESEARCH

By L. M. Fanning

The pledge of $250,000 to the American Petroleum Institute by John D. Rockefeller for scientific research in petroleum is believed to be only the start of a much larger fund to be used for this purpose. In announcing his donation, Mr. Rockefeller stated it was "for the initiation of a program of scientific research in petroleum," and as the program advances the way will undoubtedly be open for further contributions, the extent of which will depend upon the orderly development of the projects to be undertaken for investigation.

Under the terms of Mr. Rockefeller's donation the fund is to be available in annual installments of $50,000 for five years and is to be administered by a committee consisting of J. C. Donnell, Walter C. Teagle and Robert L. Welch, which is now engaged in working out preliminary plans which will probably be discussed at the annual meeting of the institute to be held in Los Angeles in January. The establishment of the fund arouses particular interest in the possible methods to be used for research work and the organizations expected to assist in the work.

It is probable that the aid of such a general research agency as the National Research Council will be secured in working out a petroleum research program, in addition to that of existing technical bodies interested in petroleum, such as the American Association of Petroleum Geologists and the petroleum division of the American Chemical Society, as well as company, Government and consulting technologists.

Much important petroleum research work has been, and is being, done by Government agencies, including the Geological Survey, the Bureau of Mines and the Bureau of Standards. It is probable that the facilities of these bureaus, both as to trained personnel and laboratories, will be used further as a broad program for petroleum research gets further financial backing. The Mellon Institute and many private industrial laboratories are also devoting considerable attention to petroleum problems.

To Interest Universities

It is believed that particular emphasis will be laid on stimulating research in universities. According to a survey made of this possible field for the carrying on of petroleum investigations, there are at least 40 American unversities which are better equipped for research than the 14 universities in Germany. In addition about a hundred smaller universities and colleges carry on some research. Most of the larger universities have experienced a marked growth in the number of students pursuing graduate studies, and more students receive the degree of Ph.D. for work in chemistry than for any other subject. The thought is advanced that such institutions should build up the scientific groundwork for the petroleum industry that the German universities did for the coal tar industries.

The point is made that existing equipment and personnel of university laboratories offer an economical means of prosecuting investigations. The particular field of research in which the university professor is chiefly interested is independent scientific research of fundamental nature, and it is in connection with problems of this character that the present program is being evolved. It is believed that yearly grants of a few thousand dol-

(Continued on Page 152)

In all the Fields of South America

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Venezuela Oil Not Considered Menace

Rather Likely To Be a Stabilizing Influence. Can Be Marketed as Required and Will Curb Reckless Drilling

By Michael O'Shaughnessy
Editor "Venezuelan Monthly News Letter"

With a few notable exceptions American oil operators do not think internationally.

At present over half of the Venezuelan crude is coming into the United States. These shipments in 1926 will be in such volume as to be an important factor in the domestic crude situation. Venezuelan oil can be delivered to eastern seaboard refineries at a lower carrying charge than from any oil field in the United States.

Notwithstanding the important reserves already developed in Venezuela, and the immense area of probable oil territory in that country, it is our opinion that Venezuela will not constitute a menace to the American oil industry, but on the other hand, may prove to be a stabilizing factor. Large reserves of oil in Venezuela, ranging in gravity from 18 to 40 degrees Baume, in the hands of strong companies can be held in reserve, or marketed as required by the industry, and will constitute a very practical curb on reckless drilling in the United States.

American oil operators would do well to carefully study the Venezuelan oil situation.

Remarkable progress has been made in the development of the Venezuelan oil fields in the first nine months of 1925. Production was 13,618,200 bbls. against 4,700,000 bbls. for the same period in the previous year.

There were 830,000 bbls. of crude used in drilling, stored in field or terminal storage, and in transit on October 1. There were 12,788,200 bbls. shipped during the period by the following companies:

Caribbean Pet. (Royal-Dutch subsidiary)	4,563,600
Venezuelan Oil Concessions, Ltd. (Royal-Dutch affiliate)	3,109,600
Lago Pet. Corp.	2,176,500
B. C. O., Ltd.	1,980,300
Gulf Oil (from Creole Syndicate leases)	957,600

Field Developments

The following are events of more than passing interest in the various fields:

Extension of the proven area in the Mene Grande Field has been notably to the east and southward. The No. 37 well, completed in July, is located 2½ miles due south of the center of the field, and about 700 yards south of No. 38, which was hitherto the farthest south producer. No. 38 is also the deepest well in the field, completed at 2,630 feet, came in with an initial of 7,200 bbls. under 280 lbs. pressure. This well was doing around 6,000 bbls. three months after it came in. Wells Nos. 43 and 53 are big producers, and the farthest east.

El Mene Field

The additional 6-inch pipe line was completed in the El Mene Field in January. The proven area here has been extended during the year considerably to the southwestward, in the course of which work the initial flow of the wells completed was much larger than formerly. A notable example is well No. 70, completed at 887 feet, good for 4,800 bbls. of 38 gravity oil.

La Rosa

Intensive competitive drilling in a small area in the shore section by the three companies operating in this field, aggravated the sand trouble in the first producing horizon (1,450 to 2,150 feet). A second producing horizon (175 feet deeper) was discovered in the No. 18 well of the Lago Petroleum. Most of the production in the shore section of the field now comes from these sands which produce an oil of lighter gravity than the shallower sands. Work in La Rosa was seriously interrupted by a fire which occurred in the first days in June. About a dozen of the wells were affected, and the loss in oil and equipment was estimated at about $500,000.

Concepcion-La Paz

Drilling activities in these two fields became very much more active early in the year. The pipe line was completed to the loading terminal on the lake shore at Punta Piedras, and regular shipments commenced in June. The 1926 drilling program of the V. O. C., which control these fields, contemplates extensive development here.

District of Colon

Drilling in the Tarra and DeOro fields by the Colon Development Co. (Royal-Dutch) was resumed early in the year. A notable completion was T-9, around 1,900 feet, good for 2,000 bbls. through a ½-inch choke. The oil is about 30 gravity.

Ambrosia

The wildcat well drilled by the Lago Petroleum, about 6 miles from La Rosa, has demonstrated here what is undoubtedly to be the next shipping field in Venezuela. The discovery well has reached a depth of 1,378 feet. The gas pressure is high and attempts to set the 12½-inch casing up to date have been unsuccessful. In the course of this work the well has flowed at different times at the rate of from 2,000 to 4,000 bbls. a day. The 6-inch drill stem twisted off and left the tools in the hole, which has been filled with mud to control the gas pressure while fishing is under way. The Lago has made three additional locations here and the Gulf one.

Production by Companies

The following tables give comparative figures by companies, fields and months:

Company and Field	Jan. Bbls.	Feb. Bbls.	Mar. Bbls.	April Bbls.	May Bbls.	June Bbls.	July Bbls.	August Bbls.	Sept. Bbls.	9 Months Bbls.
Caribbean, Mene Grande	345,200	330,500	462,300	587,400	627,200	488,400	475,200	620,400	627,000	4,563,600
B. C. O., Ltd., El Mene	245,500	224,600	322,600	185,500	167,400	167,300	181,700	268,200	217,500	1,980,300
Lago, La Rosa	244,800	171,000	300,400	247,700	106,300	142,800	249,400	398,500	295,600	2,176,500
Gulf Creole, La Rosa	48,000	105,600	221,000	150,000	131,000	108,000	83,000	56,000	25,000	957,600
V. O. C., La Rosa	352,500	448,700	425,500	413,400	317,300	166,000	161,000	275,000	291,200	2,850,600
V. O. C., Con.-La Paz	.....	.....	.....	.....	.....	38,500	56,000	89,000	81,100	259,600
Totals	1,236,000	1,280,400	1,731,800	1,634,000	1,339,200	1,106,000	1,206,300	1,717,100	1,537,400	12,788,200

NOTE—Mene Grande figures include shipments of petroleum products from San Lorenzo Refinery. Lago shipments include products from La Salina topping plant. Fractions of 100 bbls. omitted. Figures for eight months January-August, 1925, are actual; September partly estimated.

Shipments Nine Months

Fields—	1924 Bbls.	1925 Bbls.	Increase Bbls.
Mene Grande	2,450,000	4,563,600	2,113,600
La Rosa	1,550,000	5,984,700	4,434,700
El Mene	700,000	1,980,300	1,280,300
Concepcion and La Paz	.....	259,600	259,600
Totals	4,700,000	12,788,200	8,088,200

NOTE—1924 shipments from Mene Grande were by Caribbean Pet. Co., from La Rosa by V. O. C. and from El Mene by B. C. O., Ltd. Lago and Gulf-Creole shipped no oil in first nine months 1924.

SHIPPING STATISTICS

The following statistics of shipping companies up to and including October, are illuminating:

Company and Field—	Prod. Wells Comp. to Nov. 1	Wells Comp. in Oct.	Wells Nov. 1 Flow.	Drill.	Prepar.	Working Over	Oct. Bbls. Prod.	Pt'ly Est'd. Shipm'ts
Caribbean Pet., Mene Grande	54	3	45	8	..	4	561,000	490,000
B. C. O., Ltd., El Mene	48	..	40	..	5	8	224,300	214,600
V. O. C., Concepcion	15	2	15	5	..	..	57,700	50,000
V. O. C., La Paz	8	1	8	2	..	..	48,500	40,000
V. O. C., La Rosa	24	3	19	2	..	4	248,000	250,000
Lago, La Rosa	24	2	13	4	5	4	872,900	623,200
Gulf-Creole, La Rosa	12	1	9	7	3	4	245,000	190,000
Totals	185	12	141	28	13	24	2,257,400	1,857,800

October production was 660,000 bbls. in excess of September. November will show a substantial increase over October. Our prediction of 20,000,000 bbls. for 1925 will be exceeded.

Status of Drilling Wells

The status of drilling wells in the proven fields as of November 1, is as follows:

Caribbean Petroleum (at Mene Grande) eight wells drilling. Four working over.

V. O. C. (at La Rosa), R-33 drilling at 2,000 feet. R-36 drilling at 800 feet. (At Concepcion), C-17, 18, 19, 20, 21 drilling. (At La Paz), P-11 and P-12 drilling.

Lago (at La Rosa), No. 32 drilling at 1,820 feet. No. 36 at 1,760 feet. No. 38 at 1,800 feet. No. 40 at 400 feet. No. 41, No. 44, foundation complete. No. 39, No. 42, derrick complete. No. 43, building foundations. No. 16, No. 22 and Punta Gorda, standing. (At Ambrosia), building camp. No. 1, fishing. Moving in at locations Nos. 5, 6 and 7.

Gulf-Creole (at La Rosa), Superior No. 14, drilling at 2,480 feet. Superior No. 15, at 2,250 feet. Superior No. 16 at 2,497 feet. Superior No. 17 at 1,900 feet. Superior No. 19 at 400 feet. Superior No. 18 at 1,780 feet. Superior No. 20 at 480 feet. Superior Nos. 21, 22 and 23, rigging up. Superior Nos. 2 and 8, standing.

Gulf (at Ambrosia), moving in on location Rodriguez No. 2.

Colon Development (at Tarra), T-7, drilling at 3,800 feet. T-10 at 1,000 feet. T-11, spudding in. (At de Oro), No. 3, cementing casing at 1,300 feet.

B. C. O., Ltd. (at El Mene), five wells preparing to drill.

Wildcat Drilling

Developments at Ambrosia elsewhere described in this article, indicate that this is to be the next shipping field in Venezuela, and it will be the first new

(Continued on Page 192)

JAVA A SHALLOW SAND TERRITORY WITH SOME UNUSUAL FEATURES

*By Ernest Parsons

Java has long been known as an oil producer. In 1900 the output was about 80,000 tons per annum and for the past 12 years has exceeded 200,000 tons per annum. The latest figures, those of 1923, are as follows:

Rembang	242,135
Sourabaya	58,444
Semerang	1,993
Madura	12
Total	302,584 tons

The principal oil pools are those of Tinawoen and Panolan in the Rembang area, which furnished 77,000 and 132,000 tons, respectively, in 1923. Formerly the Kutei and Lidah Pools, situated south and southwest of Sourabaya, furnished the major portion of the output, but in 1923 these two pools together only yielded 8,000 tons.

The wells vary from 500 to 800 feet in depth, and the yields are usually low, but are sustained for considerable periods. The whole of the production is from the clayey sandstones, which are either in the clay shale group or in the base of the calcareous group. There does not appear to be a good reservoir rock in this area, and this doubtless explains the low yield of the wells.

Numerous indications of oil are found scattered throughout Java, and several localities have been tested with unfavorable results. The proved productive area lies in the country between Semerang and Sourabaya and extends across to Madura. There is no doubt that several areas have been ruined as potential oil fields by the volcanic activity of relatively recent times.

The oil varies in specific gravity between 0.916 and 0.825. The average yield is 51 per cent light oils, 42 per cent lubricating oils, and 7 per cent of paraffin wax. There are three refineries situated at Rembang, Semerang and Sourabaya, and also a candle factory.

Origin of Petroleum

Petroleum occurrences are known in close proximity to volcanoes in this island, and these have often been quoted by the upholders of the theory of volcanic origin of petroleum. In 1896, Messrs. Fennema and Verbeek suggested that the oil was derived from the foraminifera, which are so plentiful in the limestone stage of the Miocene rocks of the Rembang area. There are no calcareous beds in the Tji Asem Lands, so that it is difficult to see how this view can hold good and account for the oil in this region. During the examination of the lands, all the oil indications were in the passage beds between the clay shales and the breccias. At this horizon there are numerous indications of the presence of vegetable matter, and signs of deposition close to a shore line. These transition beds include carbonaceous shales, brown coals and shales with plant remains, sandy shales with fossil wood. The conditions therefore at the close of the shale period were undoubtedly favorable for the entombment of vegetable matter. The beds were deposited in shallow water close to a coast on which there was heavy tropical vegetation. In the Tiji Asem lands the entombment of vegetable mat-

(Continued on Page 195)

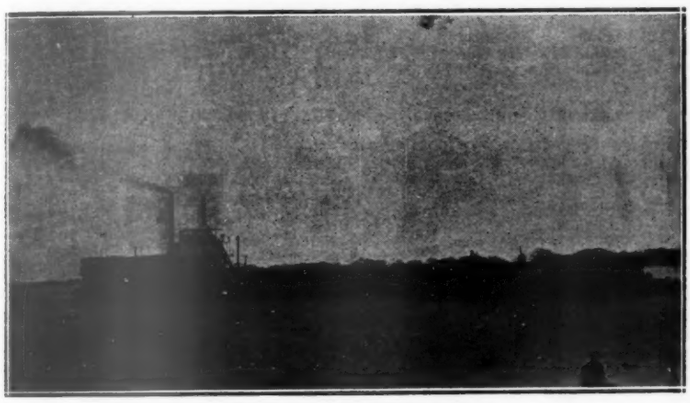
*Abstract of paper presented at meeting of Royal Society of Arts, London.

Colombia Pipe Line Ready About May 1

Will Have Capacity of 30,000 Bbls. Daily. Ready to Ship Crude to the United States When Needed

The Oil and Gas Journal learns officially that work on the pipe line being constructed in Colombia by the Andian National Corp., Ltd., has been speeded up, and that while original plans called for the completion of the line in January, 1927, it is now believed certain that the system will be completed and in operation on May 1, 1926. This line will put Colombia on the map as a petroleum producing country and will open up a new source of supply accessible to the American markets. The line will have a capacity of 30,000 bbls. daily, and its completion will throw upon the United States market, if conditions warrant, that quantity of high grade, gasoline-bearing crude.

The 318 miles of pipe line now being constructed will represent an expenditure of close to $5,000,000, including necessary terminal facilities. The Andian National Corp.'s pipe line, as at present layed out and with proposed future projections, will tap practically all present known potential petroleum areas in Colombia in which development operations are being conducted by a number of important American and British producing companies.



Tanker hauling pipe on the Magdalena River.

Contracts Already Signed

Initially the company will operate pursuant to a contract with the Tropical Oil Co.—the first company which has developed a commercial production of crude oil in Colombia—whereby the latter agrees to move through the pipe line the first 50,000,000 bbls. of oil produced by it, and available for export. The International Petroleum Co., Ltd., controlling the Tropical, and itself controlled by the Imperial Oil-Standard Oil (New Jersey) interests, has contracted to take at Cartagena all of the oil delivered through the pipe line by the Tropical Oil Co. and available for sale during a period of 15 years from the commencement of the operation of the pipe line, except such oil as the Tropical Oil Co. may require for its own use at Cartagena.

The Tropical Oil Co. is developing a concession covering over 2,000,000 acres in the Republic of Colombia. The time elapsed since its acquisition has permitted the exploration of only a small part of this concession, but competent geologists have estimated the potential production of such explored portion at more than 70,000,000 bbls. The present production is at the rate of about 6,000,000 bbls. per annum and drilling is being conducted at a rate which indicates a production of some 10,000,000 bbls. per annum at the earliest date at which adequate transportation to seaboard terminal can be provided. The Tropical Oil Co. has up to date expended in development work and in laying foundations for large future development in excess of $20,000,000.

Trunk Pipe Line

The trunk line runs from Barranca Bermeja to the terminal at Mamonal on Cartagena Bay, a distance of about 318 miles, the line following the river from Barranca Bermeja to Calamar then across the country about 40 miles to Mamonal.

The accompanying map shows approximate location of pipe line.

The Magdalena River runs through a broad, fertile valley and this valley is bounded on the east and west by two ranges of high mountains from Barranca Bermeja to El Banco. The valley is about 25 miles wide but after reaching Pinto the hills from both ranges of mountains swing in toward the river and confine it to a more regular course to its delta. On the broad, level reaches of the valley above El Banco the river overflows the banks for miles inland during the rainy season and a great portion of this section is permanently swampy.

The only means of heavy freight transportation through this region of Colombia is the Magdalena River and of necessity the pipe line had to follow the route of the river for the reason of economy. To lay the line far enough back from the river to get on high ground would add greatly to the length of the line and would also make for much expensive road construction in order to transport the pipe from the river to the high ground.

From Barranca Bermeja the line follows the east bank of the river as far as San Augustin at which point the river is crossed and the line continues down the west bank of the river to Calamar, from which point it runs across country to Mamonal, the terminal on Cartagena Bay.

Construction Difficulties

The principal difficulty in the construction of the pipe line has been one of transportation as the pipe had to be transported from the United States by steamer to Cartagena thence on a narrow gauge railroad of the Colombian Railways and Navigation Co. to Calamar, a port on the Magdalena River, which was the start of the river transportation.

The line is being constructed of screw pipe of the line pipe weight of 41 85-100 pounds per foot, with the exception of the water crossings of El Dique and the Magdalena, Cesar, Lebrija and Sagamosa Rivers, at which crossings double lines of 10-inch extra heavy pipe are being installed.

The line is expected to carry a pressure of 600 pounds, and it is estimated that its capacity at that pressure will be 30,000 bbls. per day. The following list gives the names and locations of the eight main pumping stations, together with the elevation of each station and the number of miles between stations.

Number Terminal	Location	K.M	Miles Between Stations	Elevation Feet
	Mamonal	0.0	41.79	26.24
1.	Bar Neuva	67.4	39.56	27.88
2.	Plato	131.2	40.30	55.76
3.	Santa Ana	196.2	40.30	82.00
4.	Los Negritos	261.2	38.30	88.88
5.	San Bernardo	323.0	37.10	124.64
6.	Pto. Mosquito	383.0	35.46	150.88
7.	Chingale	440.6	45.26	180.40
8.	Galan	513.0	318.07	270.93

Gathering Station

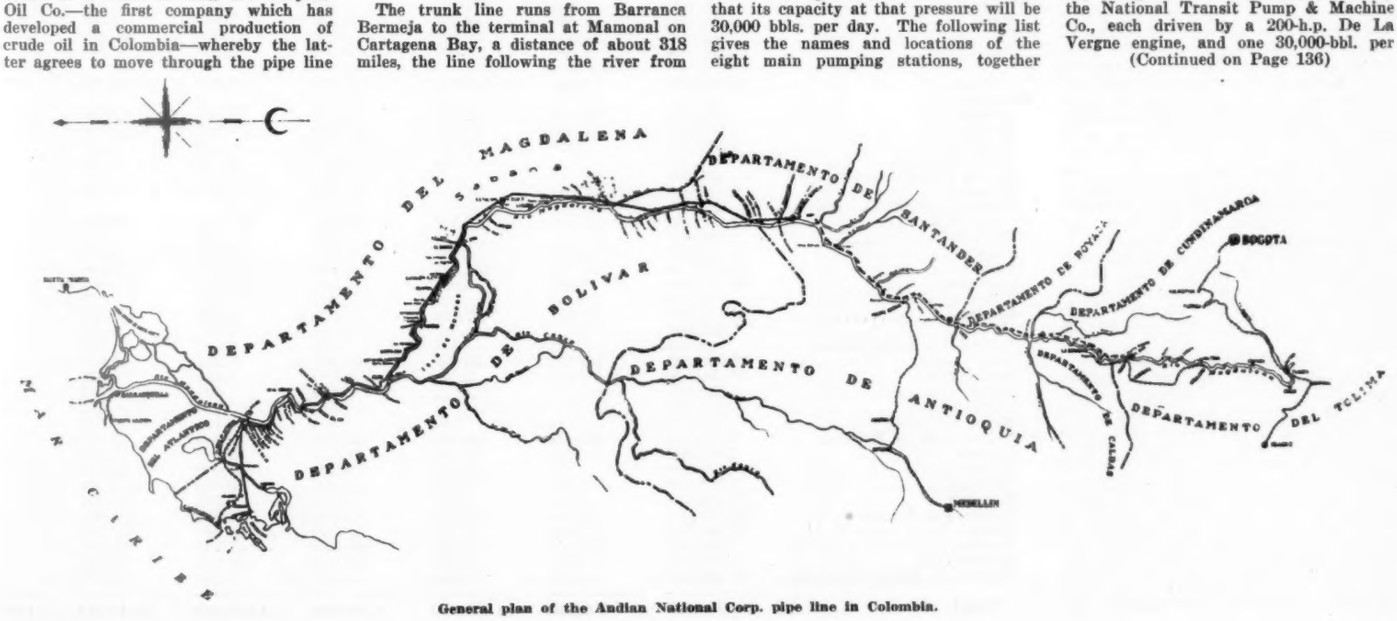
In addition to the above trunk line stations, there is being constructed at the present time, one gathering station located at El Centro near the Infantas Field, about 18 miles from the first main line station of Galan, which is situated alongside of the Barranca Bermeja refinery of the Tropical Oil Co.

Mahoney Machine in Operation

El Centro station will be supplied with three 15,000-bbl. per day pumps made by the Prescott Co., which will each be driven by a 200-h.p. Westinghouse Electric, Squirrel-cage motor.

Stations one and eight will have two 30,000-bbl. per day Prescott pumps each direct connected to a 500-h.p. De La Vergne engine. Stations two to seven, inclusive, will have two 15,000-bbl. per day pumps of the ranger type, built by the National Transit Pump & Machine Co., each driven by a 200-h.p. De La Vergne engine, and one 30,000-bbl. per

(Continued on Page 136)



General plan of the Andian National Corp. pipe line in Colombia.

Motor Car Measure of Development

Survey of the Automobiles of the World Reflects Industrial Expansion of the Various Peoples With America Leading

By Charles E. Bowles

Out of every 1,000 cars and trucks in the world, at the end of 1924, the United States had 827.

Of the remaining 173, the other countries on the North American continent had 35—South America had 10—Europe had 101—Asia had 9—Africa had 5 — Australia had 12—with the remaining car on an island in the Pacific Ocean.

As an illustration of how the automobile and motor truck have gripped the people of the United States—as compared with the rest of the world—the State of Pennsylvania had more cars and trucks, at the close of 1924, than there were in Canada, Mexico, Central America, the West Indies and South America combined.

Ohio and Illinois had, together, more than all of Europe.

Iowa had more than Asia, Africa, Australia and the islands of the sea.

And, if we were to add the cars and trucks in California, Michigan and New York, we would have more than there are in all of the foreign countries combined.

Industrial Development

But mere comparisons of figures do not tell the real story which essentially involves the whole problem of the relative industrial development of the different countries of the world. And probably the relative industrial progress of the different nations can be no more concretely expressed than in their adoption and use of the automobile and motor truck. In fact, the motor vehicle has become a sort of barometer to which we look for, and by which we measure, the rate of industrial development of nations.

Regardless of what the mines, the forests and the soil of the different continents and countries have yielded, it is undoubtedly true that, in the aggregate, these yields are small in comparison with the resources yet to be taken from the crust of the earth.

A survey of the world's resources, as at present, estimated, is staggering—for, in practically all of the forms of either natural or convertible wealth, we have scarcely more than scratched the surface. And regardless of the expansion of mining, agricultural and manufacturing facilities, the real indicator of the utilization of the resources lying within the boundaries of the different nations is, in the last analysis, transportation. And, of all of the varied forms of transportation facilities, the automobile and the motor truck are undoubtedly the most typical of present day industrial progress. The motor vehicle industry, in its entirety, has been created within the present generation—and we are, today, too close to the metal, the wood and the rubber of the car and the truck to realize the marvelous effect that they have had in speeding up the world's progress.

Hence, while the accompanying table of registrations of motor vehicles in the different countries of the world has a foreground of figures—its real background is industrial growth and development.

All Go Hand In Hand

Cars and trucks, good roads, factory expansion, resource development and intensified business go hand in hand. And when we think of what it will mean when South America has several million cars and trucks instead of 214,000—and Africa a million instead of 112,000—and Asia several million instead of 177,000—Australia a million—and Europe as many as there are in the United States today—we will realize that motor vehicle registrations are not merely figures, but that they are symbolic of a broad general industrial development that reaches down into the everyday life and progress of the people—and quickens it.

"Slowly developing markets" is the promise back of the motor vehicle registrations in all of these foreign countries. The registration, in almost every one of them, seems small in comparison with our States or even our large cities. And the real answer to the problem of motor vehicle expansion in all of these countries will be found in the gradual development of their mines, forests, soil, factories and transportation facilities—and reflected in a "buying power" of the average family that will put them in the class of potential purchasers of automobiles.

One reason why the motor vehicle has, either directly or indirectly, crept into practically every home in the United States is that in no other country in the world has the average family a comparable "buying power." As agriculture, mining, manufacturing and transportation expand in foreign countries and the proportion of wealth, per average family, increases, the "buying power" per average family will increase—and with it the market for motor vehicles.

Future Expansion

The real measure of the rate of expansion of the motor vehicle in foreign countries will come in the future—and will necessarily be determined by the "buying power" of the average family. After the leading industries and businesses and the more prosperous individuals of foreign lands have been "sold up," the real test will be met when the car has to be

AUTOMOBILE REGISTRATION THROUGHOUT WORLD

Continent and Country	Population Latest Census	Car and Truck Registration 1920	1921	1922	1923	1924	Per Cent
North America—							
United States and Alaska..	105,765,000	9,211,695	10,449,120	12,239,651	15,092,902	17,592,931	.....
Canada and Newfoundland.	9,051,000	403,611	469,910	510,295	643,371	639,591	.....
Mexico	15,800,000	18,000	25,000	20,734	24,485	35,000	.....
Total	**132,616,000**	**9,633,306**	**10,944,030**	**12,770,680**	**15,760,758**	**18,267,522**	**85.91**
Central America—							
British Honduras	45,000	60	68	73	99	111	.....
Costa Rica	459,000	200	200	268	325	471	.....
Guatemala	2,004,000	350	500	884	575	920	.....
Honduras	662,000	125	200	232	240	355	.....
Nicaragua	639,000	200	270	290	300	405	.....
Panama Canal Zone (U.S.)	.....	1,500	1,950	1,323	2,127	3,598	.....
Panama, Republic	401,000	.....	....	790	815	....	.....
Salvador	1,336,000	100	300	415	525	1,000	.....
Total	**5,546,000**	**2,535**	**3,488**	**4,275**	**5,006**	**6,770**	**.03**
West Indies—							
Bahama Islands (British)	53,000	.....	150	280	551	682	.....
Barbados (British)	199,000	700	1,000	1,100	1,125	1,310	.....
Cuba	3,123,000	31,800	32,000	33,800	36,500	32,000	.....
Dominican Republic	700,000	1,500	1,800	1,939	2,110	2,210	.....
Dutch W. Indies, or Curacao	53,000	150	243	243	321	400	.....
Guadalupe	229,000	300	506	540	590	601	.....
Haiti	2,500,000	400	460	622	685	1,000	.....
Jamaica (British)	858,000	2,130	2,100	2,135	2,817	3,600	.....
Martinique (French)	245,000	800	1,000	1,000	983	1,025	.....
Porto Rico (U.S.)	1,299,000	5,500	6,500	6,656	9,500	11,456	.....
Trinidad (Brit.) and Tobago	1,000,000	1,200	1,921	1,953	2,050	1,850	.....
Virgin Islands (Brit.-U.S.).	26,000	250	309	309	309	235	.....
Total	**10,265,000**	**44,730**	**47,983**	**50,577**	**57,541**	**56,369**	**.26**
South America—							
Argentina	8,698,000	28,000	70,000	78,413	85,850	130,000	.....
Bolivia	2,899,000	600	600	365	450	1,092	.....
Brazil	30,645,000	14,700	18,500	25,000	28,000	41,750	.....
British Guiana	298,000	800	1,050	1,075	1,400	896	.....
Chile	4,038,000	8,800	8,000	7,893	8,000	10,000	.....
Colombia	5,847,000	1,200	2,500	2,154	2,430	3,000	.....
Dutch Guiana	113,000	120	135	135	140	70	.....
Ecuador	2,000,000	450	625	627	620	900	.....
French Guiana	44,000	100	110	110	110	62	.....
Paraguay	800,000	350	400	470	457	411	.....
Peru	4,500,000	3,200	3,200	3,306	3,500	4,900	.....
Uruguay	1,461,000	11,000	10,000	12,500	13,000	16,689	.....
Venezuela	2,250,000	2,800	2,800	3,350	3,800	4,400	.....
Total	**63,593,000**	**72,120**	**117,920**	**125,398**	**147,757**	**214,170**	**1.01**
Europe—							
Austria	6,428,000	19,300	19,300	11,729	14,325	14,865	.....
Belgium	7,593,000	13,000	18,500	36,000	57,000	92,700	.....
Bulgaria	4,909,000	200	300	650	745	1,003	.....
Czecho-Slovakia	13,604,000	.....	4,133	9,350	9,159	12,748	.....
Danzig (International Port)	365,000	.....	....	869	1,135	1,771	.....
Denmark	3,318,000	7,800	14,000	22,260	42,201	47,352	.....
England, Scotland, Ireland and Wales	47,307,000	420,000	497,532	498,271	642,853	796,339	.....
Esthonia	1,250,000	.....	.....	254	430	742	.....
Finland	3,366,000	2,000	2,000	2,154	2,300	5,950	.....
France	39,402,000	202,500	236,148	295,876	444,812	575,000	.....
Germany	59,858,000	75,000	90,000	128,092	152,068	219,990	.....
Gibraltar (British)	17,000	90	105	105	150	273	.....
Greece	4,777,000	2,000	2,500	5,200	4,800	5,500	.....
Hungary	7,945,000	.....	.....	2,200	2,962	4,610	.....
Iceland and Faroe Island...	94,000	130	145	145	175	325	.....
Italy	38,835,000	35,550	53,000	53,825	75,201	95,000	.....
Jugo-Slavia	11,600,000	2,000	2,300	2,300	2,314	5,970	.....
Latvia	1,850,000	.....	.....	160	398	635	.....
Lithuania	4,651,000	.....	.....	450	650	493	.....
Malta (British)	212,000	140	209	429	470	694	.....
Netherlands, or Holland ...	6,977,000	20,000	20,000	22,740	18,489	34,000	.....
Norway	2,691,000	12,100	14,340	11,122	12,863	21,000	.....
Poland	26,376,000	.....	1,700	5,200	10,000	12,789	.....
Portugal	5,957,000	8,000	8,000	10,600	9,600	9,700	.....
Rumania	17,393,000	2,500	6,000	6,248	9,750	8,200	.....
Russia and Siberia	125,000,000	33,200	38,237	13,000	14,000	15,000	.....
Spain	21,347,000	17,650	41,000	41,000	53,000	70,000	.....
Sweden	5,847,000	12,000	14,250	29,478	43,000	62,589	.....
Switzerland	3,881,000	16,500	18,011	19,001	23,039	29,848	.....
Turkey, in Europe and Asia	12,100,000	620	1,500	1,950	1,400	2,600	.....
Total	**484,950,000**	**902,320**	**1,103,210**	**1,230,658**	**1,649,289**	**2,147,686**	**10.10**

sold to the family—as the bulk of car sales are today in the United States.

Some idea of the rapid growth of the motor vehicle industry in this country can be gotten from the following tabulation which shows the registration on December 31, and the increase in registration during each of the following years:

Year	Registration Dec. 31	Increase Dur. Year	Per Cent Increase
1919	7,558,848	.....	...
1920	9,211,695	1,652,847	22
1921	10,449,120	1,237,425	13
1922	12,239,651	1,790,531	17
1923	15,092,902	2,853,251	23
1924	17,592,931	2,500,029	16
Increase in 5 years		10,034,083	133

And if we tabulate the foreign registration in the same way we have:

Year	Registration Dec. 31	Increase Dur. Year	Per Cent Increase
1919	1,285,798	.....	...
1920	1,701,093	415,295	32
1921	2,076,246	375,153	22
1922	2,280,713	204,467	10
1923	2,935,930	655,217	29
1924	3,671,821	735,891	25
Increase in 5 years		2,386,023	186

Show Big Increase

The reassuring thing in the table of foreign registrations is the fact that, in the 5 years ending December 31, 1924, they showed an increase of 186 per cent in comparison with an increase of 133 per cent in the United States.

Accustomed as we are today to increases in this country of over two million a year, the increase for all of the rest of the world, of half a million a year, seems small.

The foreign registration has almost trebled, however, in the last 5 years—and if, in the next 6 years (January 1, 1925, to December 31, 1930—) the increase in registrations averages only 20 per cent a year, the close of 1930 will see the "foreign" registrations total close to 11,000,000.

AMERICAN AUTOMOBILES DISCOURAGE BOLSHEVISM

American automobiles are being used as an argument against bolshevism in a poster published in France.

The poster shows on one side 25,000 automobiles in Soviet Russia, a 12 to 14-hour working day, and workmen going to the factory on foot.

On the other side America is represented with 17,726,000 automobiles, the working day does not exceed eight hours, and one workman out of every 10 rides to the factory by automobile.

During the last 6 years the exports of cars and trucks from the United States and Canada combined were as follows:

Year	Cars	Trucks	Total
1919	86,742	18,937	105,679
1920	160,578	34,078	194,656
1921	40,705	8,901	49,606
1922	102,184	14,007	116,191
1923	184,516	37,291	221,807
1924	203,002	41,256	244,258
Total	777,727	154,470	932,197

Setting the column showing total exports alongside the column from a preceding table showing increases in registration we have:

Year	Increases in Registration	Total Exports
1920	415,295	194,656
1921	375,153	49,606
1922	204,467	116,191
1923	655,217	221,807
1924	735,891	244,256
	2,386,023	826,516

As our exports during the last five years have averaged about 35 per cent of the increase in registration, the conclusion that we are furnishing about that percentage of the foreign market would seem justified. And if, in the next 6 years, the foreign registration increases about 7,500,000—and the United States and Canada furnish about one-third of the increase—the foreign market will be of very material assistance to American manufacturers.

In one of the preceding tables it is shown that during the last 5 years the annual increase in registration in the United States has been 22, 13, 17, 23 and 16 per cent, respectively. At the beginning of 1925 the registration was about 17,500,000. And if, during the next 6 years, the increase averages 15 per cent a year, this will mean that at the end of 1930 the total registration of cars and trucks will be approximately 40,000,000—and this is a wholly impossible figure. It merely proves that when the industry has grown to the point that the great proportion of the yearly sales go to individual families, then the largest factor that determines increase of car sales will be the increase in the number of families.

In other words, in the United States we are rapidly approaching a point where the largest factor in the increase in registration will be the increase in the number of families, rather than in the "buying power" of the individual family.

In most of the foreign countries, after the "primary" market (industries and wealthy families) has been well cared for, the size of the "secondary" market will be determined almost wholly by the "buying power" of the individual family. In India, for example, the average earning power per capita, per year, is said to be about $25—or about $125 at the average annual income for a family of five. It is not difficult to imagine how far economic conditions would have to develop in India to place the "average" family (and there are about 60,000,000 of them) in the class of potential Ford buyers.

And what is true in India today is true, to a greater or less degree, in many other countries in Asia—and in Africa—and in South America—and to a lesser degree in Europe and in Australia.

"Quantitative" population is not the determining factor in individual development.

Regardless, however, of these limiting factors—which are not pressing as hard today as they will in a dozen years—we can look forward to an increase in registrations in the United States in 1925 that will run the total for December 31 to close to 20,000,000—and for the rest of the world at close to 4,500,000—or a world registration at the end of 1925 of something over 24,000,000.

AUTOMOBILE REGISTRATION THROUGHOUT WORLD

Continent and Country	Population Latest Census	Car and Truck Registration 1920	1921	1922	1923	1924	Per Cent
Asia—							
Aden (Brit.) and Arabia	5,055,000	150	180	243	643	775	.....
Ceylon (British)	4,505,000	3,500	4,350	4,000	4,062	6,312	.....
China	320,065,000	6,000	8,150	7,421	8,847	10,102	.....
Chosen, or Korea and Taiwan (Japan)	17,284,000	80	96	.....	1,050	1,273	.....
Dutch East Indies	49,200,000	15,500	18,000	22,000	33,151	36,252	.....
French Indo-China	18,965,000	2,000	3,000	3,000	4,272	5,800	.....
Hong Kong (British)	625,000	550	600	595	799	1,452	.....
India (British)	319,075,000	25,550	45,983	46,465	48,629	55,900	.....
Japanese Empire	77,005,000	11,750	12,260	10,811	10,500	22,111	.....
Mesopotamia (Irak)	2,849,000	.....	.....	5,000	5,000	800	.....
Palestine	755,000	.....	.....	800	1,000	964	.....
Persia	9,500,000	200	245	689	865	1,280	.....
Philippine Islands (U.S.)	10,350,000	15,709	15,000	15,791	15,400	14,843	.....
Siam	9,022,000	1,300	1,500	1,950	1,941	2,600	.....
Straits Settlements and Fed. Malay States	2,198,000	8,500	8,000	10,627	8,000	13,500	.....
Syria	3,000,000	.....	.....	1,300	1,920	2,885	.....
Total	**849,453,000**	**90,639**	**117,364**	**130,252**	**146,079**	**176,849**	**.83**
Africa—							
Algeria (French)	5,801,000	9,000	12,000	14,500	8,715	17,400	.....
Angola (Portuguese)	2,124,000	.....	250	400	500	1,300	.....
Azores (Portuguese)	242,000	40	80	162	201	360	.....
Belgian Congo	11,000,000	.....	80	240	245	*	.....
British East Africa	.....	900	1,000	1,000	1,905	3,064	.....
British South Africa	6,729,000	29,000	31,000	35,500	38,000	55,750	.....
British West Africa	.....	2,000	1,000	3,000	6,050	6,550	.....
Canary Islands (Spain)	506,000	.....	881	1,500	1,859	2,550	.....
Egypt	13,387,000	3,000	3,084	4,170	6,650	10,300	.....
French West Africa	12,283,000	.....	230	230	790	1,000	.....
Gold Coast (British)	2,100,000	.....	3,500	3,500	4,000	*	.....
Madeira Island (Portug'ese)	200,000	40	17	17	24	*	.....
Madagascar	3,545,000	130	159	239	255	432	.....
Madeira Island (Portug'ese)	200,000	40	100	171	184	299	.....
Mauritius (British)	376,000	.....	1,600	1,725	1,872	1,890	.....
Morocco (French-Spanish)	5,950,000	1,000	2,500	2,659	5,377	6,721	.....
Nigeria (British Prot.)	16,300,000	.....	.....	1,220	1,200	*	.....
Portuguese East Africa, or Mozambique	3,160,000	220	200	242	385	1,300	.....
Tripoli (Italy)	1,000,000	700	700	700	700	*	.....
Tunis (French Prot.)	1,940,000	1,000	1,990	2,280	3,219	3,926	.....
Total	**88,623,000**	**47,038**	**60,371**	**73,455**	**82,130**	**112,842**	**.53**
Australia—							
Australia (British)	5,436,000	78,000	81,000	82,417	118,091	198,000	.....
New Zealand (British)	1,274,000	30,000	37,500	37,500	44,864	60,600	.....
Total	**6,710,000**	**108,000**	**118,500**	**119,917**	**162,955**	**258,600**	**1.22**
Oceania—							
Hawaii (U.S.)	291,000	12,100	12,500	15,000	16,825	22,600	.....
Samoa (partly U.S.)	37,000	.....	.....	.....	170	186	.....
British Oceania	.....	.....	.....	152	152	*	.....
French Oceania	.....	.....	.....	.....	170	258	.....
Total	**328,000**	**12,100**	**12,500**	**15,152**	**17,317**	**23,044**	**.11**
Grand Total	**1,642,124,000**	**10,912,788**	**12,525,366**	**14,520,364**	**18,028,832**	**21,264,752**	**100.00**

*Included with other countries.

Institute Directors Whose Terms Expire At Coming Meeting

The board of councilors of the American Petroleum Institute will meet at the Biltmore Hotel, Los Angeles, Calif., Tuesday morning, January 19, to make nominations for directors.

The directors whose terms expire follow:

Production group—Pacific Coast, Mark L. Requa; Rocky Mountains, B. B. Brooks, Consolidated Royalty Oil Co.; Central, J. H. Markham, Jr.; J. D. Collett, O'Keefe & Collett; Frank Haskell, Tidewater Oil Co.; J. Edgar Pew, Sun Oil Co.; Eastern, J. C. Donnell, Ohio Oil Co.

Manufacturing group—Pacific Coast, E. W. Clark, Union Oil Co.; Rocky Mountains, T. A. Dines, Midwest Refining Co.; Central, P. M. Miskell, Empire Refineries Co.; F. A. Pielsticker, Skelly Oil Co.; Eastern, Charles L. Suhr, Penn American Refining Co.

Distribution group—Rocky Mountains, E. T. Wilson, Continental Oil Co.; Central, W. H. Barber, the Barber Co.; Eastern, A. P. Coombe, Standard Oil Co. of Ohio.

Transportation group—tank cars—H. E. Felton, Union Tank Car Co.

Natural gas group—T. B. Gregory, Manufacturers Light & Heat Co.

At large group—J. F. Lucey, Lucey Petroleum Co.; A. C. Bedford (deceased), Standard Oil Co. of New Jersey; Alex Duessen; E. C. Lufkin, The Texas Co.; Thomas A. O'Donnell, California Petroleum Corp.; William N. Davis, Mid-Continent Oil & Gas Association; E. B. Reeser, Barnsdall Corp.; H. F. Sinclair, Sinclair Consolidated Oil Corp.; George S. Davison, Gulf Oil Corp.; J. W. VanDyke, Atlantic Refining Co., and Henry L. Doherty, H. L. Doherty & Co.

SEASON'S GREETINGS FROM COL. STEWART

Addressing Christmas and New Year greetings to employes of the Standard Oil Co. of Indiana, Chairman Robert W. Stewart says:

"It is with particular optimism and with an increasing pride in our great company that I extend to you the season's greetings. The year now drawing to a close and the year whose dawn we are about to witness mark two milestones of surpassing importance in the company's history.

"In the last 12 months have occurred events fraught with significance and pregnant with promise for all of us who have staked our future upon the continuing and growing success of the Standard Oil Co. (Indiana.) Through the acquisition of great producing properties and of remarkable facilities of transport, the last 12 months have seen us bulwark the foundations of our industrial home and raise its superstructure to such heights that the industrial edifice of no other oil company in all the world may look down upon it."

World's Deepest Oil Well

"Reg. U. S. Pat. Office"

AJAX ENGINES

Records Held by Miley Oil Co.'s. Athens No. 6:

Depth of hole, 7591 feet.

Length of casing set.

Depth of successful coring, 7570 feet.

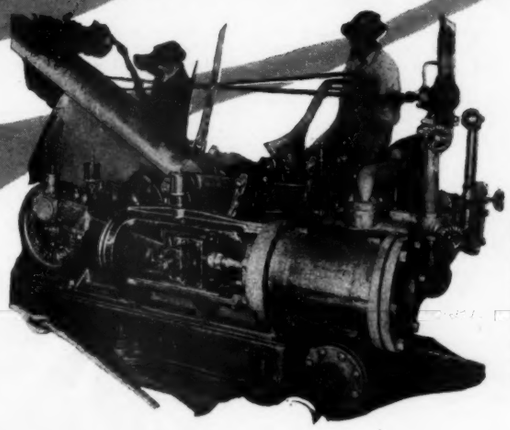
Depth of productive zone.

Greatest drilling speed on a record well.

Depth of finding oil.

AJAX STEAM

Drilled to 7591 feet



Ideal Ajax Twin Drilling Engine operating rotary at Miley Oil Co. Athens No. 6. The record well. This engine has seen 5 years continuous service with the Miley Co. —a remarkable record for equipment subjected to such racking, strenuous service.

with AJAX and IDEAL Drilling Engines
E. J. Miley Athens No. 6 Well of California
Holds World's Record

Spudded in December 26, 1924, the hole was completed at the record depth of 7591 feet on September 16, 1925. A few days later the well was brought in with an initial production of 1500 barrels a day, justifying the faith of operators in their courageous endeavor.

To overcome possible difficulties in such deep drilling the highest quality equipment was selected for the job. This naturally included the Ideal Twin and the Ajax Drilling Engines. The record hole was made at an average speed of 44 ft. per drilling day.

Ajax and Ideal Drilling Engines are

Manufactured by

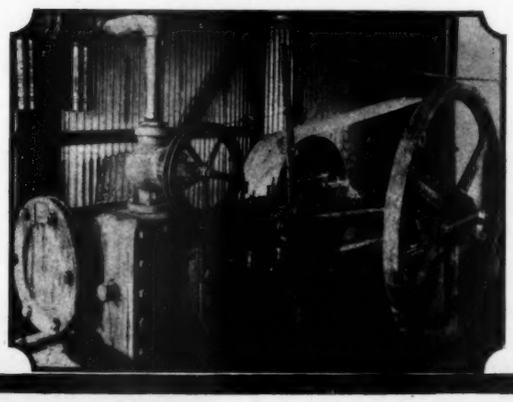
AJAX IRON WORKS

Corry, Pa.

Distributed by

NATIONAL SUPPLY COMPANIES

In every oil field



Single Cylinder Ajax Engine, Auxiliary Miley Oil Co. Athens No. 6.

DRILLING ENGINES

Peru's Petroleum Production in 1925

Exceptionally Heavy and Prolonged Rains Handicapped Operations But Output is Expected to Show Increase of Ten Per Cent

By A. M. McQueen
Vice President, International Petroleum Co.

Peru's contribution to the petroleum output for 1924 was slightly in excess of 7,812,000 barrels.

Of this total, the International Petroleum Co. of Canada furnished 6,476,661 bbls., the Lobitos Oilfields, Ltd., 1,331,955 bbls. and smaller operators the balance.

The principal oil fields of Peru are situated in the northwest part of the country in the Departments of Tumbes and Piura and center on Parinas Point, the most westerly headland of South America.

Modern exploitation of Peru's petroleum resources, the knoweldge of which

A. M. McQueen

extended back to the time of the Incas, was inaugurated in 1888 by the London & Pacific Petroleum Co., Ltd., and intensive development of its "La Brea y Parinas" estate has been carried on since 1914 by the International, which, in that year, amalgamated various operators under one banner.

All that is most modern in oil field practice and engineering achievement has been employed in overcoming the natural difficulties of a terrain consisting largely of desert. What is probably the finest harbor on the west coast of South America has been constructed at Talara, where also the principal refinery is in operation. This has a capacity of 15,000 bbls. and extensive tankage accommodation.

Negritos is the center of field activities and from there a network of narrow gauge railways extends over the producing field.

A plentiful water supply is now assured from a modern development on the River Chira, 24 miles south of the scene of operations, and this is augmented by an emergency condensing plant at Negritos, constructed in 1905.

Extent of Operations

Development has been steadily carried out along conservative lines and at the end of 1924 a total of 1,887 wells had been drilled.

Of these, at the date mentioned, 1,142 were in production with 6 gas wells in addition. During 1924, 103 wells were put down, 80 of which were producers, with an average initial production of 200 bbls. and an average depth of 1,790 feet.

The total footage drilled during the year was 239,589 feet and 58 strings of tools were in operation December 31. Two large "gassers" were brought in and a second gasoline extraction plant is in course of construction, duplicating the up-to-date installation at Lagunitos, which in 1924 produced over 2,700,000 gallons.

Production showed a large increase over previous years, as witness the following figures: 1922, 4,386,938 bbls.; 1923, 4,637,112 bbls.; 1924, 6,476,661 bbls.

Even this last-mentioned figure did not fully portray the capabilities of the field as, owing to the depressed condition of the industry, production was curtailed over a large part of the year.

It was thought that, with improved markets, the La Brea y Parinas Field would produce to its full capacity of about 30,000 bbls. daily in the present year, but nature took a hand in the game and tied up all field activities for a considerable time.

Torrential Downpour

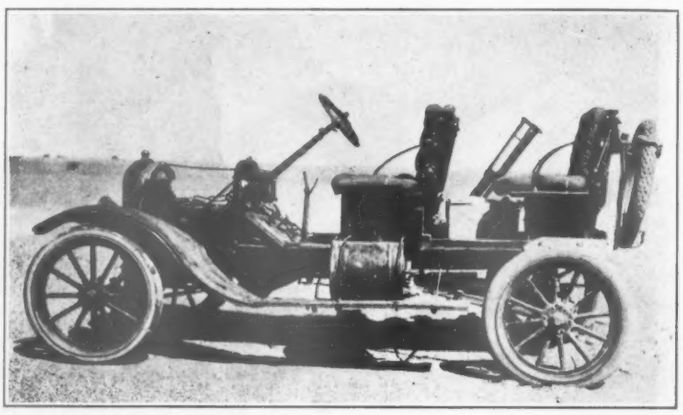
As already stated, the oil fields lie in semi-arid country which is subject to periodic rains, brought about by the influence of a warm current from the north, which, once in a while, forsakes its accustomed route and displaces the colder waters of the Humboldt current along the shore. The previously recorded torrential downpour occurred in 1891, when a sufficiency of moisture was left in the ground to insure vegetation in the desert for the ensuing three years.

The rainfall which commenced early in February of this year persisted for 60 days. Within a week of its commencement, the railway grades melted away and the whole transportation system was practically out of commission. Lakes formed in the "alinas" (salt plains) until an area of roughly 20 square miles was inundated to a depth of 3 feet.

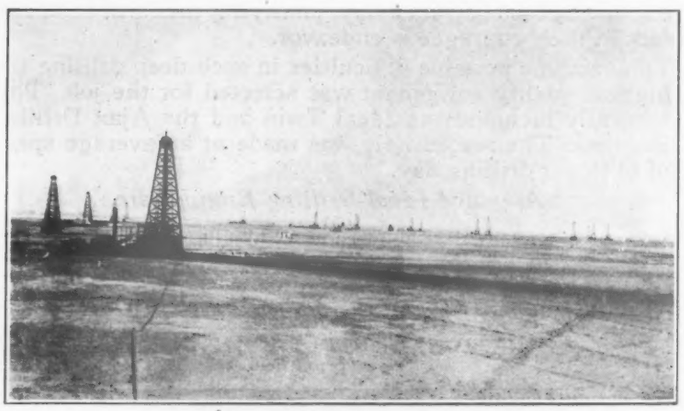
At Talara, a great ravine was torn through the native quarter by these accumulated waters, all development work throughout the field was at a standstill, all telegraph lines were down, gas lines were parted in many places, and over 100 producing wells were temporarily hors de combat. Strenuous efforts were made to protect the pumping plant on the Chira River, so that the water supply for Talara and Negritos might be safeguarded, but this had eventually to be abandoned, with the loss of one unit and a new station hurried to completion on higher ground. As a temporary relief, all available tankage was filled from the fresh water lakes on the uplands, the condensing plant at Negritos was called into action, and the S. S. "Iocoma" carried water from Callao to Talara, a distance of 528 miles.

These untoward events were responsible for a considerable curtailment of drilling activity and interference with production as it was not until the month of July that the ravages of the flood were repaired and normal operations resumed.

Despite this handicap, progress can be reported, as, in the first 9 months of the year, 50 new wells have been brought into production with an average initial capacity of 320 bbls. and average depth of 1,645 feet, whilst 30 strings of tools are now being operated. Production for the same period was 5,082,130 bbls., and, based on the present output, the International Petroleum's quota to Peru's production for 1925 will be very close to 7,000,000 bbls.



Peruvian version of a Ford.



General view of Section 38, Negritos, Peru.

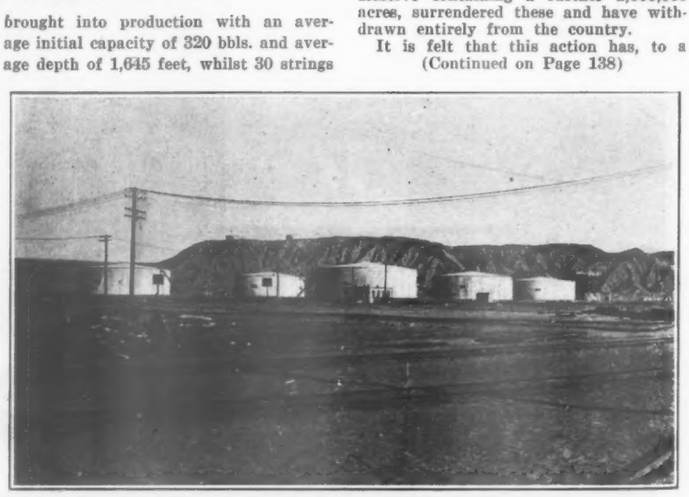
The Lobitos company also felt the effect of the floods but it is practically certain that it will add materially to its last year's production. To date, they have a total of 1,227,544 bbls., and, by the end of the year, should gross in the neighborhood of 1,650,000 bbls. With the contributions of other operators taken into account, Peruvian production for 1925, at a modest estimate, should total 8,700,000 bbls., thus showing an increase of about 10 per cent over last year.

Development work on concessions obtained under the new law has been slow, the abnormal rains acting as a deterrent to exploratory work. The Cia. Petroleo del Peru, an International subsidiary, is putting down a test well on its Tamarindo denouncement, but other concessionaires have so far contented themselves with preliminary surveys, and not a few of the denouncements have been optioned to companies capable of inaugurating development.

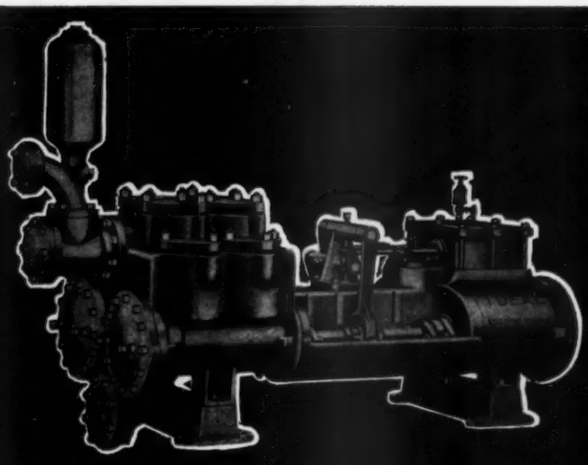
The Royal Dutch-Shell, which had under option an area of 500,000 acres, and an agreement pending with the Government for the exploitation of a National Reserve containing a further 1,000,000 acres, surrendered these and have withdrawn entirely from the country.

It is felt that this action has, to a

(Continued on Page 138)



Tanks and tablazo, Talara, Peru.



Equipment
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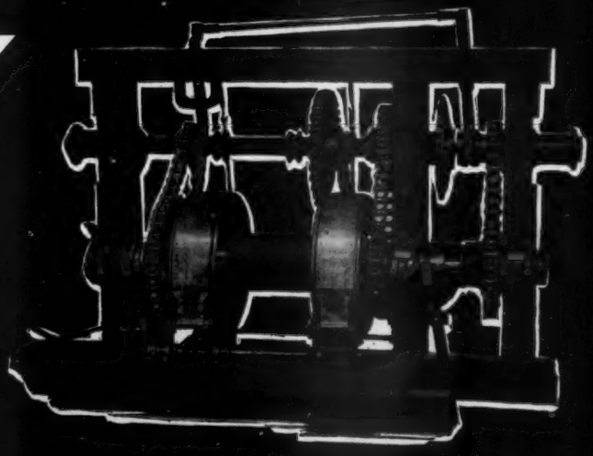

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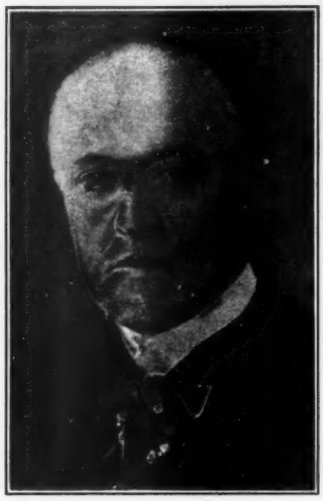

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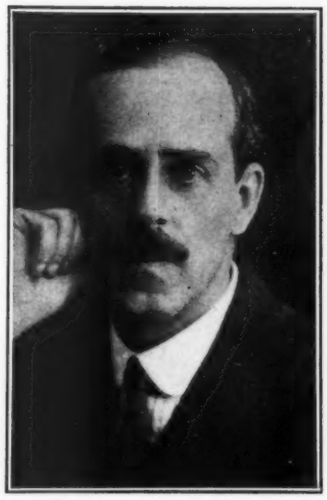

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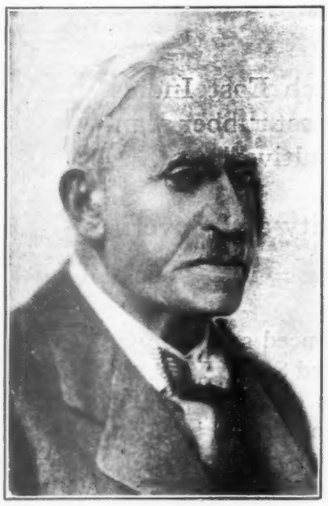

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Rubber manufacture today begins at the tree!

The United States Rubber Company is the largest single producer of crude rubber in the world.

Every pound of rubber that comes from our great plantations in Sumatra and Malaya is treated from the time it leaves the tree with a distinct view to the type of product into which it will be made—and the service which that product must perform.

In 1911 we started our own plantations in Sumatra, Dutch East Indies. Today, the United States Rubber Company operates the largest rubber plantation in the world, with over seven million trees in actual cultivation.

A recent report by Herbert Ashplant, noted rubber authority and Government Rubber Mycologist of Southern India, states:

> **"Of all the rubber areas visited none produced so much unusual information as the Plantations of the United States Rubber Company in Sumatra. Kisaran, headquarters of these plantations, has become the Mecca of all planters who wish to keep abreast of recent rubber research."**

We have been growing rubber on our own plantations for fifteen years. Today, the finest rubber produced anywhere in the world goes into the products carrying the famous "U.S." trade-mark. For example—

"U.S." Mechanical Rubber Goods for every oil industry need

From "spudding in" to the final break-down in refinery stills; from drilling rig, rotary or standard, to pipe line station; from gasoline plant to filling station, GOOD Mechanical Rubber Goods play an indispensable part in oil industry operations.

The United States Rubber Company has been manufacturing Mechanical Rubber Goods for over seventy-five years. From coast to coast, in every field, the "U.S." trade-mark is recognized as a guarantee of maximum service and satisfaction.

From the earliest days of the oil industry our oil field and oil refinery specialists have closely followed and studied every development and operating problem of the industry. This practical knowledge has enabled us to continually plan and produce better rubber products to meet the operating man's demand for greater efficiency.

Refinery Packings That Keep Down Maintenance Costs

Back in the days before Cushing and Burkburnett came in—long before the refineries that followed these fields were thought of—our packing experts were analyzing the operating problems of the refiner.

We're mighty proud of the fact that a large proportion of the refineries running oil from these famous fields and the most important fields developed since then, have standardized on "U.S." Packings.

No other packing manufacturer has made such a thorough investigation of the packing requirements of the modern refinery and gasoline plant as has the United States Rubber Company. There is not a condition from the handling of crude in the pipe line to the various pumps carrying gasoline, kerosene and hot oils, down to hot tar, that is not being packed successfully and economically with "U.S." Packing—sheet, gasket and pump. Refinery service records show that "U.S." Packings *do* make a difference.

"U.S." Matchless Inner-stitched Belt for Drilling and Pumping

Twenty years ago when oil wells were shallow and 2000 feet was a "deep hole" almost any belt would give satisfactory service. But with deeper drilling, the use of central pumping power, with its compound twist drive and the natural gasoline development, came the demand for a better belt, which would give satisfactory service in all classes of field work.

Our belting experts answered this demand with "U.S." Matchless Inner-stitched Belt. Hundreds of thousands of feet of this belt have been sold in the past ten years. It has a record of unusual service, and we have never had a single adjustment because of "bootlegging."

"U.S." Hose for Every Purpose

We have given special attention to the development of a complete line of "U.S." Hose for every oil industry operation. It ranges from the famous "U.S." Rotary Hose, and the heavy armored conducting hose for sea loading and all-around suction and discharge to the smaller types for barrel filling, tank car and wagon.

"U.S." 48-10 Air Hose is well known in every industrial field. The same is true of "U.S." Steam, Water, Fire and Welding Hose.

"U.S." Giant Gasoline Filling Station Hose, with its special patented couplings, has made exceptional records of service wherever installed.

Pioneers in Oil Field Rubber Goods

The United States Rubber Company for many years has led in the development and improvement of Mechanical Rubber Goods:

—First to make a stitched rubber-covered belt.

—First introducers of the inner stitched rubber belt.

—Originators of the hollowed-out or concave swab rubber.

—Builders of first satisfactory gasoline-proof composition gasket for tank car dome covers and outlet caps.

—Originators of solid rubber slush pump sleeve.

—Builders of first safety rubber cover for nitroglycerine cans—reducing its transportation risk to minimum.

—Originators of famous bandless nipple for oil hose.

Branches Equipped for Service

Whatever your Mechanical Rubber requirements may be—whether it is a question of a driller belt or a length of gasoline hose, a swab rubber or an oil-proof packing—our oil field branches are equipped for real service. They are operated by men who are not only experts on Mechanical Rubber Goods, but practical oil men as well. Their advice is at your disposal. You will find it valuable.

Trade US Mark

United States Rubber Company

1790 Broadway, New York City

Trade US Mark

SALES BRANCHES:

Tulsa, Okla.
Houston, Texas
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Chicago, Ill.
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New Orleans, La.

Kansas City, Mo.
St. Louis, Mo.
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Dallas, Texas
Memphis, Tenn.

Other branches in leading industrial centers.

World Survey of Petroleum Refining

Surplus Crude From Undeveloped Countries Going to the United States and British Refineries Which Are Making the Most of Oil

By Charles E. Bowles

According to Table 1 there were in the United States May 1, 1925, about 584 refineries with a rated daily capacity of approximately 3,034,000 bbls.

But according to Table 2 the rated capacity of 25 of the largest of these plants was 1,285,500 bbls. a day.

In other words, less than 5 per cent of the plants had over 40 per cent of the rated daily capacity—and 95 per cent of the plants had 60 per cent of the daily capacity.

In Mexico 14 plants had 360,000 bbls. daily capacity—but 1 of these had a daily capacity of 115,000 bbls.

In the United Kingdom 12 plants had approximately 49,000 bbls. capacity—and one of the 12 had 30,000 bbls.

In Asia there are 24 plants with 133,150 bbls. capacity—and one of them has a daily capacity of 70,000 bbls.

All of which leads up to the obvious fact that when you talk about refineries, "by number," you "don't say anything."

In the year 1924 the United States produced an average of 1,950,800 bbls. of crude oil a day. "Numerically," we had 584 refineries here and one in Alaska—a total of 585 plants. In terms of rated capacity they could have handled 3,034,000 bbls. a day—or approximately 1,000,000,000 bbls. of crude in 1924.

Surplus Capacity

The facts are that in 1924 we produced 713,940,000 bbls. of crude and imported 77,775,000 bbls. Therefore our total supply, last year, was 791,715,000 bbls., or an average of 2,163,000 bbls. a day.

We ran to stills, last year, 597,954,000 bbls. of domestic crude and 45,765,000 bbls. of foreign crude—a total of 643,719,000 bbls.—or an average of 1,759,000 bbls. a day.

Assembling these daily averages, we have—

	Bbls.
Refining capacity	3,034,000
Crude produced	2,163,000
Crude run to stills	1,759,000

As Table 1 was compiled as of May 1, 1925, and the production and runs are for the calendar year 1924, it would be fair to assume that at the close of the year 1924 the aggregate capacity of all of the refineries of the United States was approximately 3,000,000 bbls. a day.

On this basis we had a "surplus refining capacity" of about 850,000 bbls. a day above our daily production and 1,250,000 bbls. a day above our actual runs to stills.

Canada's Refineries

In 1924 Canada's average crude production was 450 bbls. a day—and her refineries had a capacity of 51,000 bbls. a day. Stretched across southern Canada, from Halifax to Vancouver, are six Imperial Oil Co. (Standard of New Jersey) refineries with an aggregate capacity of 42,800 bbls. They get their crude from Mexico, the Gulf Coast and Peru by tanker to the Halifax, Montreal and Vancouver plants—by pipe line from the Mid-Continent to the Sarnia plant—and by tank car from Wyoming and Montana for the Calgary and Regina plants.

There are probably a dozen "independent" plants in Canada, nearly all of small capacity—and the number, especially in western Canada, will probably increase as the crude output of Montana and Western Canada increases.

With characteristic foresightedness the Standard anticipated quantity crude production, in Canada, by a generation—built its refineries at strategic points—and operates them on "foreign" crude. Refining capacity will expand in Canada, at least as rapidly as the markets—and there are strong indications today that, in certain areas in Canada, the refining situation will be overbuilt to the point that, in the struggle to unload heavy stocks of refined products, much of the potential profits will be sacrificed.

Table 1—Approximate Number and Estimated Capacity of Refineries, by Countries.

Continent and Country—	No. of Refineries	Daily Cap. Barrels	*A.D.P.C.O. 1924
North America—			
United States (1)	585	3,034,000	1,950,800
Canada	16	51,000	450
Mexico	14	360,000	381,100
West Indies	1	1,500	40
Total	**616**	**3,446,500**	**2,332,390**
South America—			
Venezuela (2)	2	23,000	23,900
Trinidad	3	500	11,100
Colombia	1	2,000	1,200
Ecuador	3	200	.....
Peru	3	8,600	21,300
Argentina	17	16,000	12,800
Total	**29**	**49,700**	**70,300**
Europe—			
Russia	50	100,000	123,800
Rumania	69	70,000	36,300
Poland (Galicia)	39	50,000	15,400
United Kingdom	12	49,000	6
France	1	2,000	1,200
Germany	9	5,000	1,100
Hungary	5	.....	.....
Spain	15	3,000	.....
Italy	5	3,000	120
Czecho-Slovakia	7	1,000	200
Austria	2	1,100	.....
Belgium	1	2,000	.....
Denmark	1	1,000	.....
Norway	1	3,000	.....
Total	**217**	**290,100**	**178,126**
Asia—			
Persia	1	70,000	88,400
Mesopotamia	1	500	.....
India (Burma)	4	18,000	22,200
East Indies (3)	11	41,650	67,300
Japan	7	3,000	5,300
Total	**24**	**133,150**	**183,200**
Africa—			
Egypt	2	2,200	3,100
Algeria	...	.....	30
Total	**2**	**2,200**	**3,130**
Australia—			
Sydney	1	5,000	(4)
Total	**1**	**5,000**	.....
Grand Total (4)	**889**	**3,926,650**	**2,767,500**

1—Includes 1 refinery at 150 bbls. in Alaska.
2—Includes 1 refinery of 20,000 bbls. on island of Curacao.
3—Includes both Dutch East Indies and British Borneo (Sarawak).
4—Total for daily production includes about 350 bbls. from "other countries."
*A.D.P.C.O.—Average daily production of crude oil.

Mexico's Situation

In checking Mexico's crude production against its exports and her total refining capacity we find that of her total production in 1924 (approximately 140,000,000 bbls.) the United States imported 74,000,000 bbls.

On a daily basis Mexico last year produced 381,000 bbls. a day and we imported 201,000 bbls. a day of her crude, to say nothing of her crude that went to other countries. With a production that in 1925 will average close to 330,000 bbls. a day—and 360,000 bbls. a day of refining capacity—and the bulk of her crude output exported—it is clearly apparent that Mexico's present refining capacity is quite ample.

South America's Output

In 1924 South America's aggregate output was 70,300 bbls. of crude a day—and its 29 refineries had an aggregate capacity close to 50,000 bbls. a day.

Peru, Trinidad and Venezuela are "natural" exporters of crude oil—they produce more than their industrial development calls for. Colombia produced 1,200 bbls. a day of crude oil last year—and has one 2,000-bbl. refinery that takes care of all of her present requirements. And as soon as the new pipe line (25,000 bbls. a day capacity) begins delivering oil at the wharf at Cartageva on the Caribbean Sea, a new exporter of crude oil will be added to South America's list.

The following tabulation illustrates how the factor of "distance" enters into the problem of producing oil in South America and moving it and its products to major markets:

Country—	Location of Fields	Distances to Markets
Argentina	1—Comodoro on coast.	1—Comodoro to Buenos Aires, 1,000 miles.
	2—Jujuy, 1,000 miles inland.	2—Buenos Aires to Rio Janeiro, 1,100 miles.
		3—B. A. to New York, 5,500 miles.
		4—B. A. to Liverpool, 6,000 miles.
Colombia	400 miles inland.	1,800 miles to New York.
Venezuela	20 to 200 miles inland.	1—1,200 miles to Gulf Coast.
		2—2,000 miles to New York.
		3—5,200 miles to Liverpool.
Trinidad	On coast.	2,200 miles to New York.
Ecuador	On coast to 20 miles inland.	1—900 miles to Panama Canal.
		2—3,200 miles to New York.
Peru	On coast to 25 miles inland.	1—6,000 miles to Standard Oil refinery in Vancouver, B. C.
		2—3,300 miles to refinery in Charleston, S. C.
		3—3,900 miles to New York.
Bolivia	1,000 miles to river, plus 1,500 miles to Buenos Aires.	1—7,000 miles to New York.
		2—7,500 miles to Liverpool.

Argentina's new 14,000-bbl. Government refinery has temporarily pushed her refining capacity ahead of her crude production which last year averaged 12,800 bbls. a day. Argentina's industries are developing rapidly—and present indications are that her markets will grow faster than her crude production.

The Gulf Coast and the Atlantic Seaboard will be "primary" markets for surplus South American oil, just as they have been for Mexican oil and, recently, for California oil. Given a barrel of crude oil, anywhere in the world, the rest of the problem is one of economics.

That, on paper at least, Europe has greater aggregate refining capacity than it has crude production seems obvious. But, certainly, the larger part of Europe's refinery equipment is not comparable with refineries in the United States. There are relatively few large refineries in Europe—and a great many small ones.

Russia's Refineries

Since the close of the World War Russia has made remarkably rapid advancement in both producing and refining. Her "producing program" calls for an increase in each year's crude output that, in 1930, will place the total at 125,000,000 bbls.—or almost three times her production last year. Her refining situation is also being "made over"—and present indications are that within the next few years Russia will regain much of her old-time importance—and will be a factor to be reckoned with in European marketing.

The Anglo-Persian 30,000-bbl. refinery at Llandarcy, near Swonesa, in Wahs operates exclusively on crude from Persia. France's domestic oil activities seem limited to oil-mining at Pechelbroun in Alsace, while Germany's industry is almost exclusively at Ratisbon, on the upper Danube.

Refining In Europe

Three countries—Russia, Rumania and Poland—tell the story of crude oil in Europe. In 1924 they produced over 98 per cent of Europe's crude. And, for the present at least, Russia and England are the outstanding refiners.

Rumania and Poland, after caring for their own requirements for refined products, naturally seek "outside" markets—and find Russian, English and American products keenly competing for the business.

England is launching her refinery building program, aside from shale oil refining, from a "scratch start"—and the latest type equipment. Probably the greatest economic handicap to refining in the other countries is that the refining industry, in each of them, is old—and that much of the refinery equipment has not been sufficiently modernized to en-

(Continued on Page 138)

"—and *lowered* our cost per foot"

These reports on rotary bailing with Parkersburg Bailing Reels tell the same story—a "lowered cost per foot."

Using your 26-inch Bailing Reel, we ran a 4½-inch x 30-foot bailer to a depth of 2,500 feet in 1 minute, and pulled out, full of sand pumpings, in 3 minutes.*
— near Mexia, Texas

When the hole was down 1,622 feet, the 6⅝-inch casing was set to bottom. Then your 26-inch bailing reel was installed.
In spite of handicaps from wet steam, this hole was bailed dry in 1 hour and 15 minutes.*
— at Wichita Falls, Texas

Your bailing reel installed after the 6⅝-inch casing was set at 1,234 feet. With a 5½-inch x 40-foot bailer, the hole was bailed dry in less than half the time usually required; this in addition to saving the time usually required for changing the lines.*
— R. & D. Rogers No. 1 — Nocona, Tex.

After installing your bailing reel, we went to bottom with the drill pipe to wash out. When ready to bail, we used a swab instead of a bailer.
Your reel worked perfectly, handled easily — and the 1,333-foot hole was swabbed dry in 1½ hours.*
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At 1,620 feet, the 6⅝-inch casing was set to bottom. With your bailing reel, and using a 5½-inch sectional bailer, 60 feet long, we bailed the hole dry in 1 hour and 10 minutes!*
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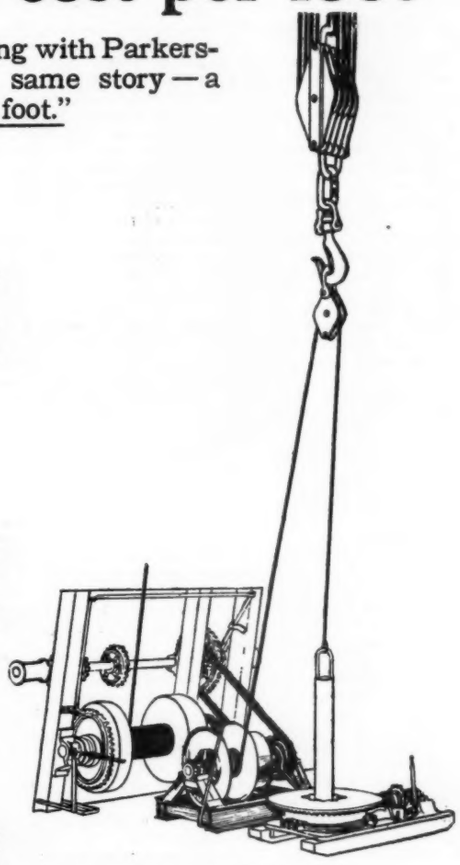
With your bailing reel, the 4-inch x 50-foot bailer is pulled, full of sand pumpings, from a depth of 2,980 feet in exactly 4 minutes. We are making round trips with the bailer in 6½ minutes.*
— at Mexia, Texas



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Breckenridge
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Dale
Liberty
Orange
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Fast Growth of Automobile in Europe

Likely to Speed the Development of Oil Fields and Refineries Abroad. Demand for American Gasoline to Increase

By L. M. Fanning

If the use of the automobile in Europe has a growth at all comparable with the growth that has taken place in this country, the world's petroleum industry will be revolutionized.

This statement is based on the premise that gasoline is the only product that is, or will be, available in sufficient quantity to make possible a multiplication of motor cars abroad.

Probable world changes in petroleum are:

(1) Intensive development of foreign oil sources close to European markets.

(2) Growth of refineries in large European consuming countries.

(3) Changed status of the tanker.

The expansion of the automobile in this country has gone hand in hand with the expansion of the petroleum industry. It is as apparent that gains in automobile production and utilization such as have occurred in this country would not have been possible without a cheap fuel, as it is that the petroleum producing and refining industry owes its phenomenal growth in the last decade and a half to the demand for gasoline created by the automobile.

To Follow America

The United States has been fortunate in having the combination of home production and manufacture of both motor fuel and motor cars—in being a country rich in natural resources and in being a manufacturing country, elements which, combined with such factors as its great area, the necessity for shortening distances by effective means of transportation and the character of its people, render this country's position as regards motor development somewhat different from the countries of Europe.

The automobile industry as it has developed abroad has been restricted largely to production of relatively high priced cars. The cost of motor fuel, due to freights and import duties, has been prohibitive.

In recent years England, France and Germany have made very definite advances in the manufacture of low-priced cars. American manufacturers are concentrating on foreign markets, particularly European markets, for an outlet for their surplus manufacturing capacity, and the low-priced cars are being emphasized in foreign sales.

These developments mean the "popularizing" of motoring in Europe—a definite automobile expansion along the lines that has made the American industry what it is today and has revolutionized the petroleum industry. Hence, it does not seem at all improbable that the outgrowth of this movement abroad will mean other revolutionary changes in the world's petroleum industry.

The most pronounced growth in gasoline consumption is in the United Kingdom, France and Italy. All together, European countries, with a total population of 380,340,000, have an insignificant motor vehicle registration, totaling only 3,006,500 cars, compared with the 17,880,000 cars registered in the United States. With a population of 112,000,000, there is one car to every six persons in this country. Taking Europe as a whole there is one car to every 126 persons.

The consumption of gasoline in European countries during 1924 probably reached a total of approximately 1,300,000,000 gallons, compared with 7,781,000,000 gallons consumed in the United States. Of this quantity England and France accounted for approximately 847,000,000 gallons, or 65 per cent of the total.

U. S. Supplies Bulk of It

The United States supplies the bulk of the European demand for gasoline. This country exported nearly 860,000,000 gallons of gasoline to Europe in 1924, or equivalent to 66 per cent of the total estimated requirements. The balance of the demand was met in large part from Russia, Poland and Rumania, in addition to Persia, which supplied crude for local refineries.

Total gasoline exports from the United States, including shipments to Alaska, Hawaii and Porto Rico, established a new high record of 1,180,000,000 gallons. Of the American gasoline exported Europe took 72 per cent, amounting to nearly 860,000,000 gallons; South America, 66,500,000 gallons, representing 5½ per cent; Canada, Mexico and the West Indies, 99,000,000 gallons, or a little over 8 per cent, and Far Eastern countries, 114,400,000 gallons, or nearly 10 per cent. The largest individual importers of American gasoline, in the order of their importances, were the United Kingdom, France, Canada, Australia, Belgium, Italy, Germany, Brazil, New Zealand, the Netherlands and Argentina.

United States gasoline exports to European countries 1913, 1922, 1923 and 1924 follow:

United States Gasoline Exports to Europe

Exported to—	*1913 Gallons	1922 Gallons	1923 Gallons	1924 Gallons
Azores and Madeira Island	67,175	14,250	19,000	.....
Belgium	7,658,151	19,932,257	32,230,891	40,181,432
Bulgaria	.....	300,000	.....	.....
Czechoslovakia	.....	.....	.....	.....
Denmark	878,387	9,121,324	10,347,661	18,859,603
Finland	.....	714,277	2,004,391	3,089,384
France	19,986,197	163,384,514	229,592,663	258,413,882
Germany	14,868,975	10,897,965	14,552,142	37,777,147
Gibraltar	.....	.....	775,553	9,000
Greece	.....	1,787,874	1,319,734	47,500
Iceland and Faroe Islands	.....	63,500	.....	.....
Italy	7,818,958	20,591,452	34,448,881	39,919,353
Malta, Gozo and Cyprus Island	.....	76,000	.....	194,000
Netherlands	10,260,642	15,822,985	10,957,780	28,461,035
Norway	.....	4,829,418	4,309,234	6,727,539
Poland and Danzig	.....	.....	38,000	.....
Portugal	1,419,206	4,152,444	3,907,480	3,877,837
Rumania	.....	.....	.....	3,800
Spain	.....	12,581,328	19,642,773	21,398,892
Sweden	1,471,525	11,936,021	15,849,218	20,501,179
Switzerland	.....	1,850	.....	.....
Turkey in Europe	.....	643,000	374,595	.....
England	19,476,466	141,449,882	239,955,485	367,395,699
Scotland	.....	.....	26,400	944,525
Ireland	.....	.....	.....	969,294
Jugoslavia	.....	100,000	.....	.....

*Fiscal year ending June 30.

The first decided change of revolutionary character that may be expected to occur with the greater use of the motor car abroad is the development of petroleum supplies closer to the European markets; in other words, a tremendous stimultaion of production in such countries as Poland, Rumania and Russia, together with Persia and possibly Mesopotamia.

Growth of Gasoline Demand

The following table gives the present status and growth of the gasoline demand in various European countries, together with motor registration and consumption of gasoline per capita, figures compiled by the United States Department of Commerce:

Country and year	Gasoline production	Total imports	Ttl. exports	Indicated consumption—Foreign units	Indicated consumption—U. S. gals.	Total motor vehicle registration	Population	Per capita consumption, gallons
United Kingdom		Imperial gal.	Imp. gals.	Imp. gals.				
1913	5,140,364	100,858,287	739,641	117,524,421	141,029,305	.....	.....	....
1923	71,000,000	329,591,149	53,063,155	347,522,994	417,027,593	.....	.....	....
1924	95,000,000	425,376,097	62,000,000	458,000,000	549,600,000	1,266,400	47,350,000	11.6
Germany	Metric tons	Metric tons	Metric tons	Metric tons				
1913	.....	248,920	2,987	244,833	88,483,000	.....	.....	....
1922	.....	213,566	19,283	194,283	70,214,000	.....	.....	....
1923	.....	165,464	44,535	120,929	43,704,000	350,000	60,000,000	0.7
France								
1913	.....	178,436	3,800	174,636	63,113,000	.....	.....	....
1922	3,077	652,924	6,600	649,401	198,374,000	.....	.....	....
1923	3,848	735,573	17,200	722,221	261,011,000	.....	.....	....
1924	4,000	849,873	37,420	833,453	297,334,000	677,009	39,400,000	7.5
Italy								
1913	2,800	30,572	33	33,324	12,046,900	.....	.....	....
1922	897	114,532	33	115,496	41,740,000	.....	.....	....
1923	898	132,636	90	133,444	48,226,700	160,000	37,500,000	1.3
Poland								
1922	79,840	.....	55,833	19,752	7,138,000	.....	.....	....
1923	83,217	.....	61,639	21,015	7,595,000	15,300	28,000,000	0.3
Austria: 1923	5,000	39,000	4,000	30,000	10,842,000	25,400	6,000,000	1.8
Rumania								
1913	422,019	.....	337,168	30,131	10,889,000	.....	.....	....
1922	285,097	.....	128,971	74,956	27,089,000	.....	.....	....
1923	300,347	.....	144,833	87,590	31,655,000	10,300	17,290,000	1.9
Belgium		Kilos	Kilos	Kilos				
1923	.....	103,561,047	6,285,907	97,275,140	35,155,185	.....	.....	....
1924	.....	161,190,000	2,717,000	158,473,000	57,272,142	138,000	7,500,000	7.6
Netherlands	Metric tons	Metric tons	Metric tons	Metric tons				
1923	.....	68,397	2,919	65,478	23,664,000	.....	.....	....
1924	.....	80,540	319	80,221	28,992,000	66,000	7,000,000	4.1
Sweden		Kilos	Kilos	Kilos				
1923	.....	86,150,535	.....	86,150,535	31,133,000	.....	.....	....
1924	.....	97,376,418	.....	97,376,418	35,409,000	83,000	6,000,000	5.9
Denmark	Metric tons	Metric tons	Metric tons	Metric tons				
1923	.....	72,131	2,981	69,150	24,991,000	.....	.....	....
1924	.....	89,472	7,699	81,773	29,553,000	56,500	3,300,000	9.0
Norway		Kilos	Kilos	Kilos				
1923	.....	28,600,550	.....	28,600,550	10,336,000	.....	.....	....
1924	.....	34,160,936	.....	34,160,936	12,346,000	26,600	2,600,000	4.8
Spain								
1922	.....	66,013,167	100,000	65,913,167	23,822,000	.....	.....	....
1923	.....	96,061,160	175,000	95,886,160	34,663,000	77,000	21,000,000	1.6
Switzerland		Metric tons	Metric tons	Metric tons				
1922	.....	39,096	.....	39,096	14,129,000	.....	.....	....
1923	.....	44,768	.....	44,768	16,179,000	40,000	3,900,000	4.1
Russia	Poods	Poods	Poods	Poods				
1911	.....	.....	4,129,557	.....	.....	.....	.....	....
1922-23	9,852,583	.....	2,478,434	2,061,466	12,163,000	.....	.....	....
1923-24	12,748,800	.....	8,173,000	2,500,000	14,750,000	15,000	93,400,000	0.16

It is too much to expect that this country can continue to supply the bulk of foreign gasoline requirements, particularly in view of the ever increasing demands of home consumption. But the real expansion of these foreign oil sources has a good many artificial hindrances, and until necessity reduces such obstacles the demand for petroleum products from the United States will continue to increase.

Anything like a shortage of gasoline in this country would certainly tend to open up foreign oil fields—as it would mean price levels that would wipe out differentials in favors of United States products as against products made abroad, and which have to pay a high export tax from the country of production in addition to a high import tax to the country of destination.

Price to Stimulate

The crude oil values resultant from gasoline scarcity would make economically possible the more intensive development of foreign petroleum fields. Despite restrictive regulations, the large holdings in a few hands and the operations of petroleum lands under nationalization methods (referring chiefly to Russia), the urgent demand of a multiplication of motor cars makes it fair to assume that development would be pressed forward on something approaching a competitive basis.

Another revolutionary change closely related to that of crude oil sources is the probable building up of a foreign refining industry rivaling that in this country. It is well known that one of the principal reasons for American dominance in supplying foreign requirements for petroleum products is that this country has built up a great refining industry.

All European producing countries are now engaged in refining. The same is true of Asiatic countries. It follows as a logical economic development that as the production of petroleum in these countries increases, refining capacity will increase.

In the more sparsely settled countries native refining capacity may not ever greatly exceed home demands for petroleum products, and the greatest activity in increasing refining capacity will be in the densely populated European countries which do not have home crude oil production. Already there have been tangible signs of the trend of the times, in the great Swansea plant of the Anglo-Persian Oil Co.

Foreign refineries will grow apace in the great consuming centers—that has been the case in this country.

(Continued on Page 136)

FEATURES

Threaded Collar

With our reamer collar threaded to fit your drill collar it is easy to switch from fish tail to rock bit without loss of time or badly disturbing hole measurements.

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Positive assurance of a perfectly round straight full-gauged hole. Alternate cutters carry different bevels and thus will not track.

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Poland's Potential Fields Unexplored

Lack of Capital Restricts Activity to Deepening the Old Wells and New Ones in Tested Fields. Americans Are Drilling Fifty

By L. Orlowski
Secretary of Polish Legation, Washington, D. C.

Production of petroleum in Poland has not varied greatly during the last five years. The output in barrels amounted to 5,549,688 in 1924 as compared with an average production of 5,314,000 bbls. during the last five years.

Production in 1924 was somewhat larger than during any year since 1919. The Polish oil fields have yielded approximately 200,000,000 bbls. since the beginning of their exploitation. The largest production was reached in 1909 when the output amounted to 15,000,000 bbls. In the years immediately before the World War the industry had already begun to show a decline in production. The limited storage and marketing facilities then existing as well as a decline in crude prices brought about a closing down of many enterprises, especially among small producers, and checked drilling on new unexplored fields. Military operations during the war gave a further setback to the industry. It has been estimated that the war losses of the Polish oil industry amounted to about $50,000,000. When conditions returned to normal in 1921 the industry faced a new situation. The general postwar impoverishment and high cost of drilling had wiped out small companies which in former times were especially active in drilling on unexplored fields in the hope of attaining great profits. The existing large joint stock companies tended to limit themselves chiefly to drilling in fields which had been explored.

Lack of Funds Handicap

The small increase in the crude oil output in the last few years is therefore to be explained by this fact, that drilling operations have been limited largely to the deepening of old wells and to a small number of new wells on fields which have been under exploitation for a long time. The situation in Poland, therefore, affords a marked contrast to that existing in American oil fields of similar area where thousands of wells are drilled each year. Lack of funds for prospecting work on unexplored fields which according to geological estimates contain billions of barrels of crude oil is the primary cause of Poland's practically stationary production.

The Polish oil fields are situated in the three palatinates—Krakow, Lwow and Stanislawow. These palatinates lie along the frontier between Poland and Czecho-Slovakia. The oil belt is roughly 250 miles long and about 30 miles wide. About 90 per cent of present production comes from the Drohobycz district which lies south of the city of Lwow. The richest wells are in the vicinity of the towns of Boryslaw, Tustanowice and Mraznica. In 1924 1,700,000 bbls. were taken from the Boryslaw fields, 1,800,000 from the Tustanowice fields and about 800,000 from the Mraznica fields. In these fields the more shallow deposits, those drilled at a depth of 2,300 to 3,000 feet, are almost exhausted. This is also the case of a part of the deposits discovered at a depth of 3,600 to 4,200 feet.

Crude oil from the above mentioned fields in the Drohobycz district contains 6 to 8 per cent paraffin and gasoline up to 10 per cent. In 1924 some 261 wells were producing in these three fields. Of this number 168 wells produced up to 35 bbls. daily, 13 wells from 35 to 70 bbls., 26 wells from 70 to 140 bbls., 12 wells from 140 to 700 bbls., 2 wells from 700 to 1,400 bbls.; 43 wells were producing only gas.

In the Jaslo district (Palatinate of Krakow) oil is found at comparatively small depth, from 1,000 to 2,000 feet. Crude output from wells in this district in 1924 amounted to 410,000 bbls. Daily production of these wells seldom exceeds a dozen barrels, but continues during a great number of years, in some cases up to 20 years. The crude oil produced in this district is chiefly used for the production of lubricants of high value.

The Stanislawow district (Palatinate of Stanislawow) developed in 1924 a production of 294,000 bbls. The principal deposits are found at a depth of 1,000 to 3,300 feet. Crude oil mined in Bitkow in this district gives from 30 to 90 per cent gasoline content.

Transport Good

The Polish fields are readily accessible being situated close to railway lines. Transport of crude oil is easily effected as the distances are relatively short: likewise there are no difficulties in transporting drilling equipment. The Polish meturallurgical industry supplies the oil fields with machinery, pipes and cables needed. A number of plants are engaged in manufacturing special drilling implements which before the war and even now find a market in other oil producing countries. Much of the equipment used by the Baku fields before the war was supplied by Polish factories, then within the Russian Empire.

Until recent years wells in the Polish fields were drilled exclusively by the Galician-Canadian System. The extreme slowness of this method of drilling has led to successful experiments in the last few years with the rotary, cable and other drilling methods. These, however, have to be modified to meet the peculiarities of the Polish geological strata.

Gas and coal are used for heating purposes. Gas is produced either on the spot or supplied by gas lines. Coal is abundant in Poland. Lately the electrification of wells has been introduced and in several localities electric power for drilling is supplied by large central stations.

Crude oil is piped from the wells either by the producer's own pipe lines, or by lines belonging to special pipe line companies. to storage tanks erected at railway stations.

The Polish oil fields employ about 10,500 workmen. There is no shortage of first class technical personnel. Strikes are very rare, wages being regulated on the basis of a joint agreement which all the employers have concluded with the unions. Workmen's wages for an 8-hour working day in April 1925, varied, according to category, from 1.49 zlotys to 5.29 zlotys. In addition the workmen receive monthly allowances ranging from 5 zlotys to 23 zlotys besides allowances in kind such as lodging, lighting and fuel, or the cash equivalent. (One zloty equals .193 par, or about 17 cents at prevailing exchange rate.)

Legal Titles and Mining Laws

Under Polish law oil deposits underground are the property of the owner of the real estate. The owner may transfer the oil mining right to other persons, which right represents a separate legal and property right that can be disposed of, mortgaged or divided into shares. The owner of the mining rights may drill any number of wells on the acquired area permitted by mining law and build thereon all auxiliary installations. Usually the land owner assigns the oil mining rights for a period of 25 years with the stipulation that the lessee must commence drilling within a stated time. The land owner reserves the right to a part of the crude oil or gas mined, usually from 6 to 20 per cent, and exacts a small compensation for every metre of the area used for drilling purposes. All such rights and obligations must be entered in the mortgage or oil field books kept and superintended by the Courts of Justice. Mining regulations determine the distance of one well from another, the distance of a well from the boundary of the property, provisions for protecting neighboring wells from consequences of defective technical exploitation, and other provisions governing the exploitation of wells in accordance with technical requirements, workmen's safety and public order.

The share of the crude oil accruing to the owner of real estate under the provisions of the lease is delivered to the State Refinery and paid for at a rate fixed monthly by agreement or by arbitration, based on the market price for crude oil.

The last available estimate indicating the cost of drilling in the Polish fields places the approximate cost of a 5,000-foot well drilled during four years by the Polish-Canadian boring method at 630,000 zlotys. The cost of drilling a 1,600-foot well in one year by the same method was given at 140,000 zlotys.

The increasing gas production, in 1924 it amounted to 15,468,217 feet, has given impulse to the establishment of plants producing gasoline from gas, besides leading to the establishment of many enterprises dealing exclusively with gas. Gasoline factories, which have been established only within the last few years, are situated exclusively in the Boryslaw district which is producing "moist gas." The five plants now working consumed in 1924 1,496,706,000 feet of gas and produced 1,288,125 gallons of light gasoline. This light gasoline is mixed with heavier grades of gasoline obtained from crude oil and used for general purposes. Pure light gasoline is used for aviation.

Polish Refining Industry

The refineries are mostly situated in the oil fields; several, however, have been constructed near the coal mines of the Krakow district. There are 38 refineries in Poland; 7 large refineries have a refining capacity each of 75,000 bbls. monthly; 8 medium sized refineries have a refining capacity each of 22,000 bbls., and 12 more can each work up to 7,500 bbls. The largest refinery is the State Refinery erected by the Austrian Government for gasoline extracting purposes and subsequently enlarged by the Polish Government into a complete refinery. Some 6,500 workmen are employed by the refineries. The total working capacity of all Polish refineries is about 9,000,000 bbls. yearly, which is almost twice the present crude oil output. All of the large and most of the medium sized refineries have acquired mining properties and produce most of the crude oil which they refine. The difference of interest which formerly existed between refiners and producers in regard to oil prices now exists between those refiners whose crude oil production covers their requirements and those who are compelled to buy crude oil on the market.

In 1924 the Polish refineries produced the following products:

Kerosene, 1,520,000 bbls.
Gasoline, 770,000 bbls.
Gas oil, 815,000 bbls.
Lubricating oils, 830,000 bbls.
Paraffin, 76,000,000 lbs.

(Continued on Page 148)

ANCIENT DOCUMENT RECALLS NAMES OF NOTABLE EARLY DAY OIL MEN

By James McIntyre

An interesting document containing the names of scores of men well known in the oil business 50 years ago, and some of whom later became nationally known, recently came into the possession of Morris Shear of Bradford, Pa., who operates in the Bradford and Oklahoma fields. Mr. Shear was one of the signers of the document, which was placed in his charge by Ralph Lockwood of Tulsa, son of another signer.

Morris Shear is one of the real old guard of oil men. They are fast disappearing, those old-timers who date back to the late sixties, but Mr. Shear is hale and hearty after all the ups and downs that go with the business of producing oil over a period of more than half a century. He started in the oil business in 1869 as a field worker in western Pennsylvania and while he never became a John McKeown or a Waite Phillips, he need ask no odds of anybody and is still looking ahead with the faith that makes oil production possible. Like all dyed-in-the-wool oil men, Mr. Shear closes each business year with the firm conviction that "next year will be better than this one, and I think we are due for a rise in the crude market," which is the sentiment that has kept the oil business alive and growing since 1859.

An Ambitious Program

The document which Mr. Shear has given into the care of The Oil and Gas Journal with the request it later be turned over to the Drake Memorial Association, is an agreement entered into by Clarion County, Pennsylvania, oil producers and supply men in 1878 to form the St. Petersburg Petroleum Producers Association, capital stock $5,000, the character and business of which was to be the "producing, buying, storing, insuring, refining, shipping, transporting and selling of petroleum and its products and the acquisition and management and of such property, real, personal and mixed as may be deemed necessary or advisable to use in its business or in connection therewith." The location of the business was to be in St. Petersburg, a thriving town in the heart of one of the busiest fields in the then small world of oil.

The names of the officers of the association selected to serve the first year were J. Adams Vera, Charles W. Pratt, William S. Taylor, Marcus L. Lockwood and Thomas E. Dutton. J. Adams Vera was elected chairman, Charles W. Pratt secretary and William S. Taylor treasurer.

Most of the signers subscribed to $50 worth of stock, but a few of the signers plunged, Colonel Vera subscribing $300. James Kifer $100, Alfred Noyes Strong $100, Thomas Edward Dutton $250, Orlando Henry Carpenter, Michael Mackin and John Miles Fink $100 each.

Days of Cheap Operating

The capital stock, $5,000, seems now to have been a very small amount on which to carry out a program that included producing, buying, refining, storing, insuring, shipping, transporting and selling, but it must be remembered that $5,000 went a long way in the oil business in those days when a 1,000-foot well could be drilled for about $1,400 and wells in the Clarion-Venango district cost from $800 up and averaged about $1,000.

(Continued on Page 144)

DRILLING OUTFITS

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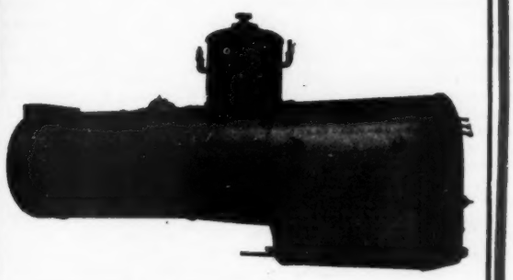
CEY
NTEE

THERE'S OIL



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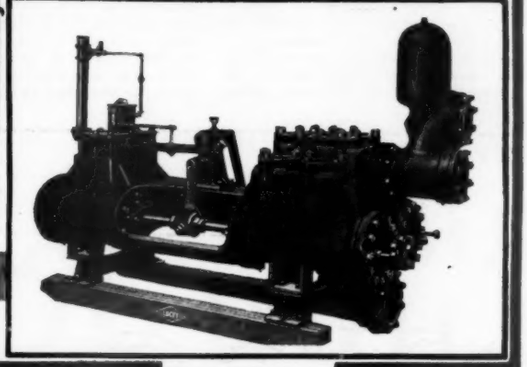

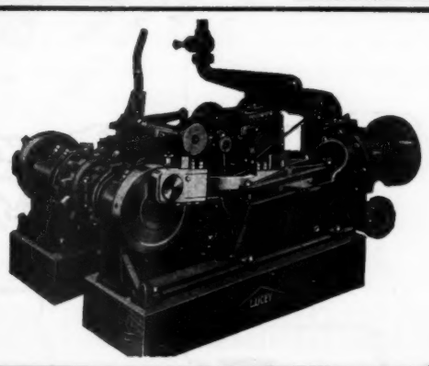

RING CORPORATION
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"Branches in All Active Oil Fields"

Guatemala Ready to Enter Oil World

Drilling May Be Started During 1926 by Several Different Companies. Geological Conditions Described

By John Eoghan Kelly
Consulting Engineer, New York

The Central American republic of Guatemala, after several years of preparation and delay, will probably enter the petroleum world in 1926, when drilling will be started by different companies. Interest in Guatemalan petroleum potentialities dates back at least to 1912, when the present principal interests began a study of geological conditions. Their interest had been stimulated by the discoveries in southern Mexico. In 1917 the entire petroleum resources of the nation were granted to a British company but the grant was found illegal and revoked. In the last days of the regime of the former president, Manuel Cabrera, a New York banker passing through the country was offered a blanket concession for a quarter million dollars cash to bolster the falling government.

Historically, geographically and geologically, Guatemala is bound to Mexico in oil matters. Parts of Mexico that are now producing petroleum have at various times been under Guatemala's sovereignity. The borders between Guatemala and several Mexican states are artificial boundaries, run without regard to watersheds or mountain chains. The same formations that produce oil in southern Mexico sweep unbroken across northeastern Guatemala and parts of British Honduras to disappear beneath the level of the Gulf of Honduras.

The Pacific Coast of the Republic as far east as a line drawn from the intersection of the meridian 91 degrees west with the boundary between the Guatemalan Department of Huehuetenango and the Mexican State of Chiapas, near the village of Africa, to the Honduran town of Copan, is generally volcanic, though seepages have been reported from a geological island at Jutiapa, west of the line. The volcanic area is high, with elevations up to 17,000 feet above sea level, a temperate climate and contains the bulk of the population. East of the line, the great portion of the territory is of sedimentary origin, with the exception of a chain of mountains standing out across the lowlands toward Lake Izabal. The only other igneous outcrop is across the border in British Honduras, where an area of granite is uncovered.

Geological Characteristics

Starting at the northernmost point of Guatemalan territory, the Department of El Peten fronting on Campeche, Mexico, there is a great semicircle of miocene limestones. The southern extremity of this area is near the town of Flores on the lake of that name, at about 17 degrees North latitude. On the east, south and west, the Miocenes are bounded by a belt of the Peten limestones, probably of Cretaceous age. The Peten limestones are uncovered for a width from 25 to 40 miles. The central portion of the Department of El Peten, in an east-west zone from the Mexican to the British Honduras boundaries and from Flores to the Rio de la Pasion in latitude, is composed of Comanchean limestones, succeeded to the southward by another Miocene belt. The southern portion of the department is dominated by Cretaceous dolomites and Eocene formations and by a series of continuous or overlapping faults with a general east-west direction. The strike of anticlinal and monoclinal structures throughout El Peten is usually east-west, but the great anticline of Santo Toribio, on the property of the British Controlled Oilfields, Ltd., has a strike of about N 30 E.

South of El Peten in the Departments of Alta Verapaz and Izabal, the prevailing formations are Carboniferous, Cretaceous and Tertiary. Limestone, sandstone and marl of Pliocene, Miocene and Oligecene age are the most commonly met with. There are no igneous outcrops and the formations are well bedded and continuous.

The Department of Huehuetanango, the most westerly in which seepages have been noted, is composed of Pliocene and Carboniferous rocks, with folds running in a northeast-southwest direction.

It is estimated that about 15,000,000 acres in the Departments of El Peten, Huehuetenango, Izabal and Alta Verapaz and part of Quiche and Baja Verapaz possess conditions favorable to the existence of petroleum in commercial quantities. The average elevation of the plains of El Peten is about 800 feet above sea level. In the southern part of the country there are deep river valleys separated by heights up to 3,000 feet. One mountain, San Gil, in the Department of Izabal, attains a height of 7,000 feet. This peak is of Carboniferous formation.

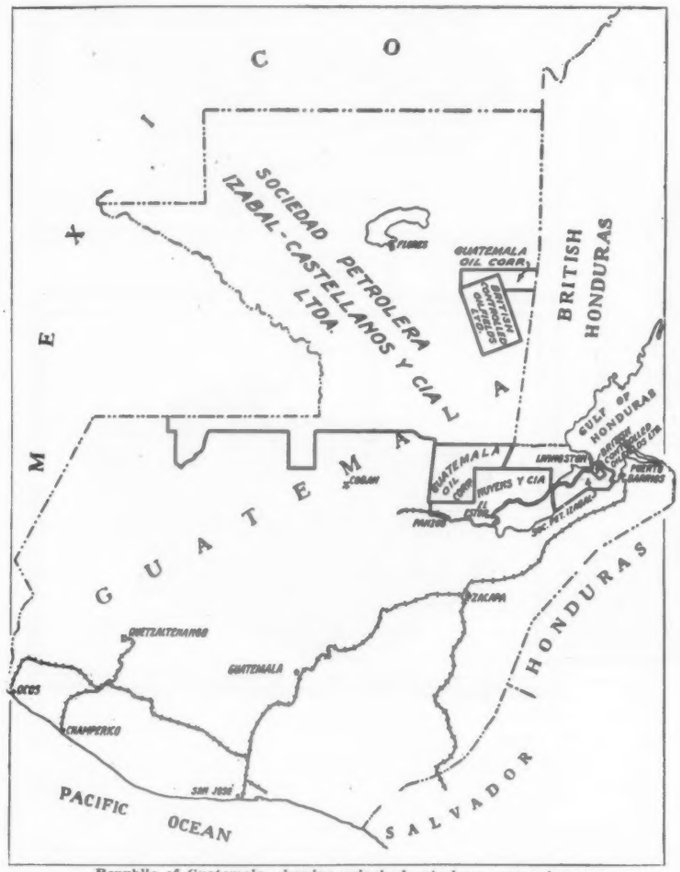
Climate is Healthy

The climate is hot but healthy and there is little sickness. Rainfall in the low lands varies from 80 to 120 inches per year, the greater part falling between June and October. The average temperature is 90 degrees Fahrenheit at midday. Parts of the territory are traversed by railways, but except in the banana country, transportation is still restricted to streams and trails. Lake Izabal, the river Polochic and the Sarstoon afford entry for small steamers and lighters into the southern country, while the River Usumacinta serves the Mexican border with an ocean outlet at Frontera, Mexico. Another means of ingress is through British Honduras and the Belize River to Flores. The Guatemalan Government is now building roads for wheeled traffic to open this region which is rich in timber, rubber, chicle and fruit, and which can be made available for cattle and coffee with transportation.

The Guatemalan Government issued a basic Hydrocarbon Law in June, 1922, under which individuals and corporations were permitted to acquire exploration permits and exploitation contracts to develop limited portions of territory. This law was modeled on the existing North American laws for the exploitation of Naval Reserve lands. The Guatemalan law has been modified several times to meet local conditions, amplifying the powers of the concessionaires and permitting them to hold larger tracts of land, as well as reducing the royalty payable to the Federal Government, until in its present form it has been pronounced one of the most liberal and workable Latin American petroleum statutes.

Holds Vast Acreage

Attention was first directed to the Department of El Peten, because of its proximity to the Mexican fields, and the entire area was soon under concession to a great number of individuals. In 1923 there was organized under Guatemalan laws the Sociedad Petrolera Izabal-Castellanos y Cia., Ltda., consolidating the private interests. This corporation, which holds over 9,250,000 acres under concession in the Departments of El Peten, Alta Verapaz, Izabal and Quiche, is the principal petroleum interest in the country. It controls the entire Department of El Peten, with the exception of small tracts held by the British Controlled Oilfields, Ltd., Guatemala Oil Corporation and Alfonso Sanchez. The capital of the corporation is exclusively Guatemalan, and there are some 5,000 stockholders. The corporation has carried on intensive geological and geographical studies of its territory, the well-known Swedish geologist, Hakon Wadell, having spent a year in the field for the Sociedad. The corporation succeeded to the rights of the individual holders, its titles having been confirmed by the competent authorities of the Republic in June, 1924. In November, 1924, the Sociedad secured a blanket concession on all its properties from the Federal Government, to obviate the necesity of handling the individual tracts.



Republic of Guatemala, showing principal petroleum concessions.

Concession is Liberal

The concession granted to the Sociedad Petrolera Izabal-Castellanos y Cia., Ltda., permits the latter to hold its properties for a period of 44 years, after which the property reverts to the Government. The former operators, however, shall be reimbursed for the value of their installation and shall have a prior right to release the property from the Government. At the expiration of the first eight years, there shall have been drilled four wells to a minimum depth of 200 meters each. The only royalty payable is 8 per cent of the gross product saved, which is the property of the Federal Government. There are no federal, state, municipal, income, import, export or road taxes in force, nor may any be levied in the future. The company has the right to install pipe lines, railways, canals, telephone and telegraph lines, roads, build and operate hydroelectric and other power stations, make use of national lands, timber, water, building materials, pasturage and combustibles, to operate land and water transportation, to engage in commerce, to establish and operate refineries and stores, to build ports, piers, light houses, sea loading stations, engineering and machine shops, bridges and towns, and to exercise the right of eminent domain. The Government retains the right to take its royalty in cash or in kind in accordance with an agreed procedure, and the company agrees to store oil for the Government, at the latter's risk, for not longer than 30 days, and only if the company has idle tankage. The company is obliged to concede petroleum at the market price to the Government in case of national emergency, to permit inspection at stated times, to employ at least 50 per cent of Guatemalan citizens, to present maps and reports at the close of each year, and not to admit any foreign government as a partner. The company's obligations are in suspense during periods of war, fire, flood, accident or force majeure. The company is considered of public utility and entitled to the support of the Federal Government in case it should desire to condemn private or municipal territories. The concession may only be cancelled for acts against the safety of the Republic, for admitting a foreign government as partner, for failure to pay the royalty, and for failing to comply with the provisions of the concession regarding drilling.

(Continued on Page 150)

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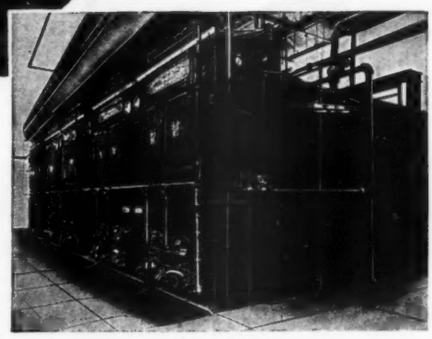

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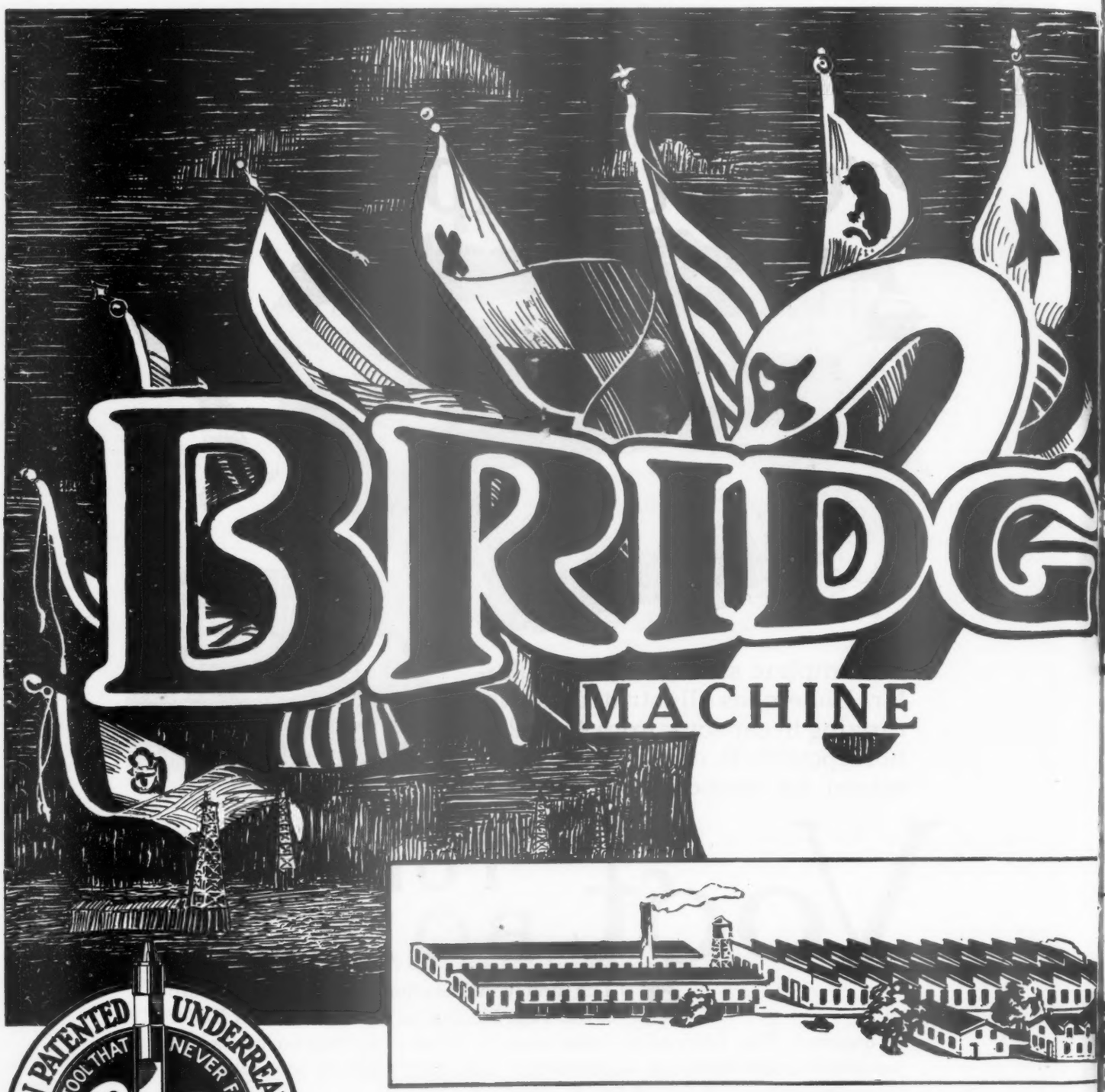

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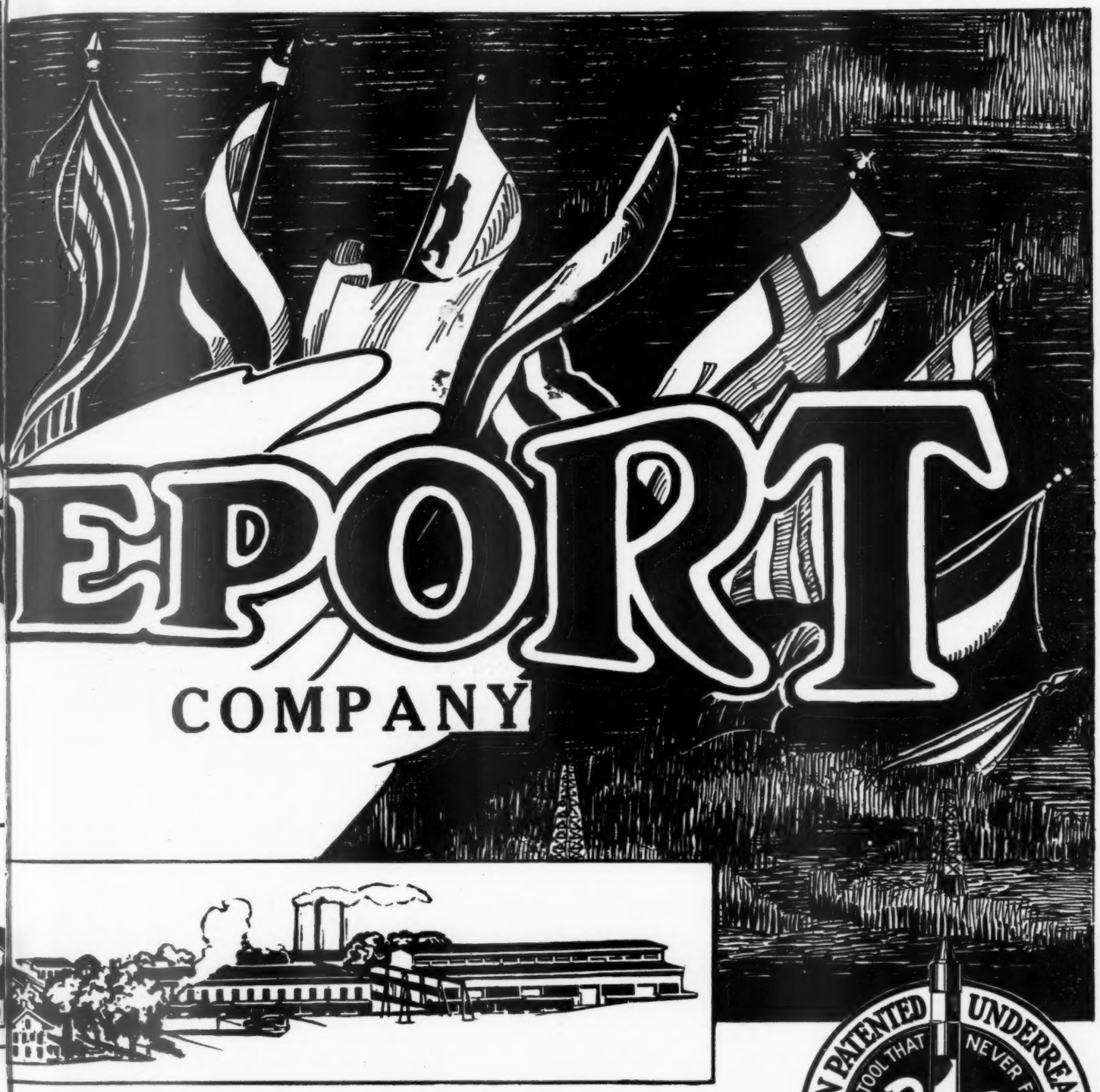

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AGS OF ALL NATIONS

Important Developments in Rumania

Pre-War Rate of Production Already Exceeded. Changes in Technique and Geological Discoveries in 1925

By A. Beeby Thompson*

Only the most phlegmatic could fail to be impressed with the favorable prospects of the Rumanian oil industry after a visit to the various fields. Already the pre-war rate of production has been exceeded, and it is certain that next year will see the most important oil developments ever approached in Rumanian history. A great change has been effected by the altered attitude of the Government towards the industry. After a period of hesitation and suspicion, which at one time seemed likely to frighten foreign capital from the country, there has been a relaxation of restrictions and an amelioration of other disabilities. The distributing question of nationalizing foreign companies has been partially met by compromises which, if they do not satisfy foreign interests, at least provide reasonable safeguards of security.

Without the sympathetic assistance of foreign finances it is certain that the industry cannot develop rapidly, for the money stringency is the subject of comment on all sides. Loans can only be contracted and bills discounted at the prohibitive rate of 20 to 24 per cent, which, of course, prevents trading credits being obtained.

In order to properly appreciate the claims of those engaged in the oil industry it is necessary to recall that the majority of the best operated oil lands of the country were, until recently, held by the peasants. While the great landlords had possession of the rich agricultural plains, the peasants owned plots in the foothill country where most of the oil fields have been located. These lands have become cut up into small plots through a process of hereditary descent, whereby each member of the family obtained a definite portion of the land itself, and did not accept a cash equivalent.

Peasant Owners' System

Properties in this way get cut up into small plots, so that oil-producers had to bargain with a host of peasants to secure an acreage which would justify development. This system, although regularized by the Consolidate law, which provided against abuses connected with titles, still threw upon operators a series of difficulties which have been a hindrance to development. It has, likewsie, led to a wasteful system of well spacing and is causing increasing difficulties with the changes in technique. These cut-up oil fields cause a repetition of the trouble occasioned by townsite drilling in the United States, but in an exaggerated degree, as the fields are mostly located in hilly districts where all kinds of devices have to be arranged to reach and work their plots. Under the system prevailing, private arrangements have to be made with each independent plot owner for rights of way to transport materials, lead pipe lines, etc., while compensation has to be paid for damage to cultivation, dwellings, etc.

Although it is obvious that an oil field cannot be farmed, the peasants continue their occupation in order to extort immoderate compensation from the helpless leaseholder. Besides clinging to their farms in the face of great inconvenience, discomfort and often danger, the peasant landowners accept service in the fields as carters and laborers, etc., and in that capacity become experts in the art of fleecing the oil producer. The peasants thus obtain high royalties, rents for wayleaves, etc., compensation for damage to properties and wages for work; consequently they are an envied class amassing considerable fortunes.

Many important changes are causing the oil producers to seek a modification of past restrictions. Firstly, the peasant-owned oil fields are becoming worked out, thus causing urgent demands for some of the State lands adjoining the peasants' lands. These lands have long been known to be richly petroliferous, and their release would not only ease an intolerable situation, but provide a means for established companies to extend their operations, and so derive prolonged benefit from the large capital outlay on permanent buildings and works designed to support the field operations. These included dwellings, workshops, power houses, pump stations, oil storages and such like accessories pertaining to an oil property.

Secondly, the evolution of technical methods necessitated by deeper drilling is greatly increasing the difficulties connected with congested operations. Heavier and larger plant entails larger power plants, improved transport and more elbow room for operations. The roads, or rather tracks, become increasingly littered with broken-down vehicles and bogged machinery, thereby causing exasperating delays for materials on the fields. Staff movements are also hindered.

But what is more serious, the conditions of land tenure lead to costly deep wells being sunk, with the same disregard for spacing as the shallow wells. Unless some organized method of distribution can be mutually arranged, enormous sums will be lost in unwise competitive drilling.

Some of the larger old established but enterprising interests have collected a concentrated acreage in unproved areas by extensive leasing, often at considerable expense, thus avoiding some of the difficulties occasioned by small holdings, but in such cases obligatory drilling often enforces an uneconomical distribution of wells. Until larger plots, such as are usually confined to Government holdings, are released, the evils described cannot be eliminated.

Valuable State Leases

Some years ago the Rumanian Government leased to two Rumanian groups certain proved State lands, and these have been operated with great success and profit; and the Government is now leasing to various established interests willing to conform to the Nationalization law certain perimeters of practically proved land in proximity to the existing fields. In this way valuable leases have been granted to the Astra Romana (Shell-Royal Dutch), Steaua Romana (Anglo-Persian), Unirea (Phoenix), Group-Concordia (Belgium group), Aquilla Francais (French), as well as to the two great Rumanian companies, the Credit Minerva and the I. R. D. P. It is in consequence of these arrangements that so much is expected from Rumania in the near future.

The State lands which have been or are about to be granted comprise some of the most promising oil plots in the country, and their sizes and locations will relieve the companies from many of the troubles, difficulties and expenses connected with small holdings. Rationally developed by adequate spacing of wells they are likely to prove not only very prolific, but very profitable to the proprietors, besides a source of substantial revenue to the Government.

Drilling Methods

Apart from land developments, a great change is being made in the methods of operating the Rumanian oil fields. The value of rotary drills has now been positively demonstrated, and in a few years this process will virtually replace the customary percussion-flush process in general use. It is strange with what reluctance many Rumanian operators have taken to the rotary, and with what persistence it is still argued that the old systems will hold their own. As in other countries, there are naturally some regions and certain geological formations in which the rotary is less satisfactory than in others, but all records have been broken by the rotary, and speeds have been made which compare favorably with drilling in other parts of the world.

One reason for the hesitation in adopting rotaries was the antagonistic attitude of the mining authorities, who feared the consequences of a water-flush process, notwithstanding the fact that the percussion-flush process was used without concern. Until quite recently the mining officials insisted upon the replacement of the rotary by percussion before drilling into the oil sands, and although permission has recently been given in a few cases to enter the sands under certain restrictions, the method is not viewed with favor. As a matter of fact, the pressures met with in the deeper wells now being drilled are causing both producers and mining officials much concern, as serious blow-outs have occurred. Wells are now being drilled at Moreni to depths exceeding 3,000 feet, and the consequent pressures prevent wells being brought in under control by past methods. The rotary offers the only satisfactory means of bringing these deep wells into production without risking repetions of the recent events at Moreni. Both the Romana-Americana well No. 1 Pleasa and the Phoenix No. 28 caused grave anxiety. The first by burning for several weeks when flowing around 1,000 tons of oil daily before it was extinguished; and the latter by spraying oil on the dwellings in the Cricov-bed and filling up the valley with inflammable gas and oil spray.

Old Systems

Only one argument in favor of the Canadian and percussion-flush drills appears to hold good, namely, that straighter wells are obtained than with the rotary. This is a point of some importance, but it is certain that with more experience with the rotary more vertical and more straight wells will be drilled. No one can deny that the German and Australian rigs are fine pieces of mechanism which inspire admiration from all engineers, but the system is wrong in principle, and it appears to the writer that however perfect the mechanical arrangements to reduce shocks, the use of rods or tubes for deep percussion work can never approach in efficiency or speed the rotary type. They certainly cannot compete in speed with rotaries in soft ground and in hard ground there appears no great advantage in speed.

The replacement of the old systems by rotaries will revolutionize drilling in Rumania, and instead of a year or more being occupied in drilling deep wells, it is likely that the period will be months. Not only will speeds be greatly accelerated, but it is almost certain that the mining authorities will eventually be satisfied that suitable muds will exclude overhead waters, and thus lead to relaxation of water exclusion regulations which now involve the employment of one or several extra strings of expensive casing.

To what extent these great departures from former practice will influence Rumanian oil developments for the better can only be conjectured. It will, how-

(Continued on Page 182)

*Reprinted from Financial Times, London.

AMERICANS NOT OUT OF TURKISH CO. DESPITE RUMORS HEARD IN LONDON

By L. M. Fanning

Denial of the report emanating from London that the American group has withdrawn from the Turkish Petroleum Co. sets at rest for the time being the possibility of the dissolution of the group, the formation of which marked the first instance of combined American interest in the development of foreign petroleum resources. That a solution of the vexing question of the open door as applied to oil development in foreign countries can best be solved under the group plan has been the opinion of certain high government officials, and it was largely due to these views that the American oil companies belonging to the present group consented to the participation agreement in the Turkish Petroleum Co. These views held that the banding together of American interests in foreign petroleum development would insure the financial strength necessary in obtaining and operating foreign rights and at the same time strengthen the government's position in insisting on equal treatment for its nationals, due to the fact that participation included not one interest in the oil business, but several.

The report that the American group had withdrawn from the Turkish Petroleum Co. apparently grew out of a statement made by Sir Charles Greenway, chairman of the board of the Anglo-Persian Oil Co., enumerating the shareholders in the Turkish company and failing to mention the American group. Following the oil convention signed at Bagdad early this year by the Government of Iraq and the Turkish Petroleum Co., which marked the first effective step forward the possible development of oil production in Mesopotamia, it was announced that the Turkish Petroleum Co. was comprised of the Anglo-Persian Oil Co., the Royal Dutch-Shell Co., the French group and the American group in equal parts, but with a 10 per cent royalty payable by the Turkish Petroleum Co. to the Anglo-Persian group in return for the halving of its original share of 50 per cent in the company in order to admit of the American group's entry on equal terms.

The recent report published in The Morning Post of London had it that the 25 per cent interest held by American oil interests had been given up and that now the shares of the company are held as follows: Anglo-Persian, 47½ per cent; Royal Dutch, 22½ per cent; amalgamation of 65 French companies, 25 per cent, and C. S. Gulbenkian, who, it is stated, originally procured the Mosul concession now held by the Turkish Petroleum Co., 5 per cent. Coincident with the report were published rumors that the Standard Oil Co. had secured concessions from the present Turkish Government.

Teagle Makes Statement

W. C. Teagle, president, Standard Oil Co. (New Jersey), issued a statement that the report that oil concessions have been granted to the company or that it had made any kind of agreement with the Turkish Government was utterly

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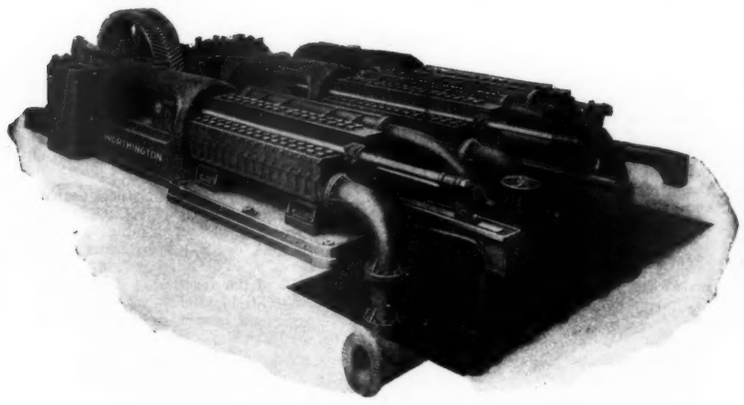

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Diesel Engined Vessels Increasing

World's Merchant Marine Definitely Committed to the Use of Oil for Fuel. Revival of Traffic Means Bigger Oil Market

By L. M. Fanning

The world's merchant marine is definitely committed to the use of oil as fuel.

That shipping, now demoralized, may revive next year is not a remote possibility in view of the expected improvement in world commerce, and while there will always be conversion of steam vessels from oil to coal and vice versa, depending upon the relative prices of the two fuels and the particular routing of the ships, an active shipping situation practically demands the advantages of oil fuel as a means of meeting competition.

The certainty of continued demand for oil by ships does not rest wholly with the oil burning steam vessel. The biggest present development in shipbuilding is the Diesel engined vessel, using Diesel oil as fuel.

The oil burning steam vessel was primarily an outgrowth of war conditions, the commissioning of such vessels occurring on a large scale during the war and multiplying as new vessels came off the ways during the boom in shipping after the war.

The movement toward Dieselization—the internal combustion motor vessel—is post-war and is now in its most pronounced stage.

From an insignificant pre-war total, world oil burning vessels of both steam engine and oil engine type now comprise a third of the total registered tonnage.

Lloyd's Register shows that almost 50 per cent of the world's shipbuilding at the present time is composed of vessels equipped with internal combustion engines.

Four Years' Comparison

Of the total shipping, Lloyd's figures reveal a gradual increase in vessels burning oil has taken place over the past four years, in spite of the apparent differential in favor of coal existing over considerable periods during that time. In 1925 world steam and motor vessels of 100 gross tons and over numbered 29,205 with an aggregate tonnage of 62,380,376 tons, of which 5,635 ships totaling 20,518,195 tons were equipped for burning oil and 23,570 ships totaling 41,862,181 tons for burning coal.

In 1925, therefore, 34 per cent of the world's tonnage is oil burning and 66 per cent coal burning.

In 1924 of the aggregate world tonnage of 61,514,140, a total of 19,129,870 tons, or 31 per cent, was oil burning; and 42,384,270 tons, or 69 per cent, coal burning.

In 1923 of the aggregate world tonnage of 62,335,373, 17,458,803 tons, or 27 per cent were oil burning; and 44,876,570 tons, or 73 per cent, coal burning.

In 1922 world shipping totaled 61,342,952 tons, of which 16,004,625 tons, or 26 per cent, were oil burning and 45,338,327 tons were coal burning.

Lloyd's classified figures are particularly used as they are complete for practically all vessels of any sizable tonnage. They include vessels of 100 gross tons and over while other classified figures—some of which will be shown later in this article—are for vessels of 500 gross tons and over.

Diesel Age in Ships

It will be noted that the most striking growth shown is that of the vessels fitted with the internal combustion engine. In 1925 the gross tonnage of such ships was 2,403,070 tons, compared with 1,540,463 tons in 1922, an increase of 862,607 tons, or 56 per cent.

Most of this growth occurred in the year ended June 30, 1925, as shown in a comparison of 1925 figures with those of 1924. In 1925 Diesel tonnage in-

(Continued on Page 154)

WORLD STEAM AND MOTOR VESSELS OF 100 GROSS TONS AND OVER CLASSIFIED ACCORDING TO ENGINES AND FUEL
(From Lloyd's Register

	1922		1923		1924		1925	
Engine—	Number	Gross tons	Number	Gross tons	Number	Gross tons	Number	Gross Tons
Reciprocating	(a)	51,653,324	25,887	51,661,908	25,556	50,669,316	25,521	50,516,808
Turbine	(a)	8,149,165	1,386	8,893,749	1,367	8,795,584	1,404	9,100,274
Internal combustion	(a)	1,540,463	824	1,221,121	953	1,664,546	1,116	2,403,070
Steam Auxiliary	(a)	.. ..	178	113,331	151	73,442	135	49,221
Motor auxiliary	(a)	.. ..	971	345,254	997	321,252	1,029	311,003
Fuel—								
Coal	(a)	45,338,327	24,402	44,876,570	23,727	42,384,270	23,570	41,862,181
Oil	(a)	16,004,625	4,844	17,458,803	5,297	19,129,870	5,635	20,518,195
Total	29,255	61,342,952	29,246	62,335,373	29,024	61,514,140	29,205	62,380,376

WORLD LAUNCHINGS
Merchant Vessels of 100 Gross Tons and Over Launched During the Year Ended December 31, 1924
(From Lloyd's Register of Shipping)

	Steam				Motor				Sail and barge					
	Steel		Wood		Steel		Wood		Steel		Wood		Total, 1924		Total, 1923	
Country—	No.	Gross.	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross
America (United States)	15	67,594	.	....	20	39,383	2	550	23	22,086	19	10,450	79	140,063	83	173,817
Atlantic and Gulf Coasts	5	23,822	.	....	18	21,880	2	550	23	22,086	19	10,450	67	78,788	64	81,603
Pacific Coast	4	11,967	.	....	...	.. ...	..	....	..	....	..	....	4	11,967	5	14,888
Great Lakes	6	31,805	.	....	2	17,503	.	....	..	....	..	....	8	49,308	14	76,326
Belgium	2	3,997	.	....	...	.. ...	.	....	..	....	..	....	2	3,997	5	1,102
China	1	1,850	.	....	...	.. ...	.	....	..	....	..	....	1	1,850	1	975
Danzig	7	15,239	.	....	1	3,600	.	....	..	....	..	....	8	18,839	8	13,211
Denmark	21	27,716	.	....	12	36,221	.	....	..	....	..	....	33	63,937	24	49,479
Fiume	...	... ...	.	....	...	.. ...	.	....	..	....	..	....	...	... ...	1	1,642
France	20	77,828	.	....	...	.. ...	.	....	..	....	6	1,857	26	79,685	27	96,644
Germany	77	77,678	1	192	28	96,141	.	....	1	1,000	1	102	108	175,113	109	345,062
Italy	10	52,139	1	700	4	27,368	2	1,340	..	....	2	979	19	82,526	21	66,523
Japan	23	56,641	.	....	8	16,116	.	....	..	....	..	....	31	72,757	44	72,475
Netherlands	33	48,586	.	....	8	15,041	.	....	..	....	..	....	41	63,627	35	65,632
Norway	32	24,164	.	....	2	975	.	....	..	....	..	....	34	25,139	48	42,619
Portugal	...	... ...	.	....	...	.. ...	.	....	..	....	..	....	...	... ...	4	1,739
Spain	2	3,859	.	....	...	.. ...	.	....	..	....	..	....	2	3,859	7	4,488
Sweden	4	4,282	.	....	6	26,592	1	212	..	....	1	124	12	31,211	10	30,118
Other countries	...	... ...	.	....	...	.. ...	.	....	..	....	3	984	3	984	8	1,691
United Kingdom and Dominions	437	1,235,834	3	643	54	235,719	1	140	23	3,411	7	1,017	525	1,484,764	266	686,914
United Kingdom	423	1,195,216	.	....	50	237,458	.	....	21	7,211	..	....	494	1,439,885	222	645,651
Australia	2	11,011	.	....	...	.. ...	1	140	1	600	..	....	4	11,751	4	13,998
Canada (coast)	...	... ...	1	102	1	228	.	....	..	....	3	470	5	800	21	6,847
Canada (Great Lakes)	2	15,064	.	....	...	.. ...	.	....	..	....	..	....	2	15,064	3	4,191
Hongkong	6	11,842	.	....	3	848	.	....	..	....	..	....	8	12,690	11	15,280
Other British	4	2,701	2	541	1	135	.	....	1	600	4	547	12	4,574	5	967
Total	684	1,697,408	5	1,535	143	500,156	6	2,242	47	31,497	39	15,513	924	2,248,351	701	1,643,181

WORLD OIL BURNERS OF 500 GROSS TONS AND OVER

Flag	June 30, 1914						June 30, 1924						June 30, 1925			
	Steam engine		Oil engine		Total		Steam engine		Oil engine		Total		Steam engine		Oil engine		Total	
	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross	No.	Gross
American*	231	646,048	8	10,316	239	656,364	1,768	8,947,095	82	186,458	1,850	9,133,553	1,777	8,934,672	80	203,787	1,857	9,138,459
Argentine	...	.....	..	.....	...	.....	6	17,194	8	9,135	14	26,329	9	29,356	10	12,274	19	41,620
Austro-Hungarian	6	25,241	..	.....	6	25,241	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belgian	1	570	2	9,028	3	9,598	9	33,149	1	7,450	10	39,599	9	37,361	1	7,450	10	44,811
Brazilian	1	3,822	..	.....	1	3,822	1	3,822	8	12,900	9	16,722	1	3,822	7	11,789	8	15,611
British	111	526,586	10	30,158	121	556,743	712	4,529,811	99	456,550	811	4,986,361	759	4,897,897	143	686,830	902	5,583,727
Chilean	...	.....	..	.....	...	.....	3	16,474	1	2,044	4	18,518	4	17,155	1	2,044	5	19,199
Chinese	1	2,230	1	612	2	2,842	3	8,758	2	1,385	5	10,143	4	11,329	2	1,385	6	12,714
Cuban	...	.....	..	.....	...	.....	5	8,547	...	.....	5	8,547	5	12,394	...	.....	5	12,394
Danish	1	4,199	10	49,249	11	53,448	15	54,580	39	167,439	54	222,019	16	61,551	40	169,681	56	231,232
Danzig	...	.....	..	.....	...	.....	3	26,692	2	11,225	5	37,916	5	40,706	2	11,225	7	51,931
Dominican	...	.....	..	.....	...	.....	...	.....	1	2,467	1	2,467	.....	.....	.....	.....	.....	.....
Dutch	35	76,535	6	14,097	42	90,632	155	716,775	29	58,996	184	775,771	...	730,175	32	77,673	194	812,848
Egyptian	...	.....	..	.....	...	.....	...	.....	3	4,530	3	4,530	.....	.....	3	4,475	3	4,475
Esthonian	...	.....	..	.....	...	.....	...	.....	2	1,134	2	1,134	.....	.....	3	1,701	3	1,701
Finnish	...	.....	..	.....	...	.....	...	.....	6	4,301	6	4,301	.....	.....	5	3,716	5	3,716
French	...	.....	4	15,388	4	15,388	57	311,878	6	23,519	63	335,397	68	387,916	6	21,669	74	419,585
German	23	119,138	10	45,733	33	164,871	40	231,862	37	122,596	77	354,458	45	257,268	55	219,344	100	476,612
Greek	...	.....	..	.....	...	.....	8	38,071	2	2,020	10	40,091	8	38,071	2	2,020	10	40,091
Honduran	...	.....	..	.....	...	.....	10	21,901	...	.....	10	21,901	17	40,998	...	.....	17	40,998
Italian	1	979	2	1,113	3	2,093	50	314,255	28	78,365	78	392,620	67	420,010	33	111,239	100	531,249
Japanese	5	46,131	..	.....	5	46,131	70	440,322	8	1,972	78	442,295	82	522,722	13	36,082	95	558,804
Mexican	6	17,795	..	.....	6	17,795	13	27,906	1	668	14	28,574	13	27,906	1	668	14	28,574
Nicaraguan	...	.....	..	.....	...	.....	1	1,561	...	.....	1	1,561	2	3,138	...	.....	2	3,138
Norwegian	5	31,075	2	3,878	7	33,953	105	515,284	73	193,903	178	709,187	100	508,353	92	290,914	192	799,267
Panaman	...	.....	..	.....	...	.....	2	19,150	2	2,767	4	21,917	1	15,746	4	10,055	5	25,801
Peruvian	5	18,192	..	.....	5	18,192	6	18,507	...	.....	6	18,507	6	18,507	1	653	7	19,160
Philippine	...	.....	..	.....	...	.....	...	.....	...	.....	...	.....	3	6,003	...	.....	3	6,003
Portuguese	...	.....	..	.....	...	.....	1	1,739	4	4,008	5	5,747	2	2,822	3	2,951	5	5,773
Rumanian	...	.....	..	.....	...	.....	2	5,974	...	.....	2	5,974	3	6,882	...	.....	3	6,882
Russian	3	5,979	..	.....	3	5,979	2	3,038	3	2,341	5	5,379	2	3,038	3	2,341	5	5,379
Siamese	5	3,209	..	.....	5	3,209	2	1,203	1	750	3	1,953	3	1,715	2	2,050	5	3,765
Spanish	...	.....	..	.....	...	.....	20	82,504	8	17,882	28	100,386	22	91,015	8	17,889	30	108,904
Swedish	...	.....	4	14,895	4	14,895	14	69,213	47	179,961	61	249,174	16	76,542	54	234,411	70	310,953
Uruguayan	...	.....	1	552	1	552	3	3,936	2	1,957	5	5,893	2	3,306	2	1,957	4	5,263
Venezuelan	...	.....	..	.....	...	.....	...	.....	...	.....	...	.....	1	1,976	...	.....	1	1,976
Total	441	1,527,728	60	194,019	501	1,721,747	3,086	16,470,202	500	1,558,722	3,586	18,028,924	3,214	17,215,342	608	2,157,273	3,822	19,372,615

Year	Steam engine		Oil engine		Total	
	No.	Gross	No.	Gross	No.	Gross
1923	2,917	15,229,946	431	1,248,158	3,348	16,478,104
1922	2,694	13,838,178	416	1,166,376	3,110	16,004,608
1921	2,474	12,415,181	374	959,471	2,848	13,374,652
1920	1,731	8,345,913	290	693,334	2,021	9,039,247
1914	441	1,527,728	60	194,019	501	1,721,747

*Including oil burners on Great Lakes.

Note—All figures, except for American vessels, are prepared from Lloyd's Register.

New Year's Measurements

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of American Meter Company

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For 1926

Our Resolution, not changed, but strengthened, shall be: To further merit the recognition so widely accorded our products by extending our research, improving our service and introducing every practical advancement in metering to the end that always we will give this industry the most accurate, economical meters obtainable.

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METRIC METAL WORKS

Recovery of the Oil Industry in Russia

Production Is Still Below 1913 but Petroleum Exports Are Higher Than in Pre-War Year. Modernization of Equipment

By Harold Kellock
Statistical Director, Russian Information Bureau, Washington, D. C.

The steady recuperation of the oil industry of the Soviet Union and its approach to pre-war volume of production are shown in the following tabulation of output:

	Metric tons
Calendar year 1913	9,215,911
Calendar year 1920	3,893,000
Fiscal year 1922-23	5,275,430
Fiscal year 1923-24	6,067,921
Fiscal year 1924-25 (11 months)	6,306,320
Fiscal year 1925-26 (program)	8,400,000

The Soviet fiscal year begins October 1.

While production is still below that of 1913, the Soviet Union during the past fiscal year increased its petroleum exports to a figure higher than the pre-war volume. The comparatively large exports were made possible by a decrease of home consumption as compared with pre-war, the result of the loss of heavily populated territory to Poland and the border states. The present population of the Soviet Union is 75 per cent of that of the former Russian Empire. The elimination of waste through the installation of new machinery and the adoption of more efficient methods has also increased the amount of the gross product available for export. The rise of the exports is shown in the following table:

Year	Metric tons
1913	814,032
1922-23 (fiscal year)	309,716
1923-24 (fiscal year)	723,176
1924-25 (fiscal year, 11 months)	1,246,700

Russia led the world in petroleum production from 1898 to 1901. By 1902 the American industry, in its rapid development, passed the Russian, and in 1918 Russia slipped into third place, behind Mexico.

The Russian industry, originally developed largely through foreign capital, entered into a period of decline after 1900. High taxes and incompetent management, along with peculiar restrictive laws imposed by the Czarist Government, greatly hampered development. Small holdings predominated, and there was virtually no coordination in the industry as a whole, at a period when the rival American industry had been welded into large economic units. Labor conditions in the Russian fields were peculiarly bad, and during the decade before the war a series of strikes crippled production.

Recovery From War

The World War and the civil conflicts left the industry in a chaotic condition. Much basic machinery was destroyed. There was great deterioration. The technical personnel was scattered. In 1920, when the wars and invasions ended, the new Soviet Republic was faced with the task of virtually rebuilding the whole industry. Much new machinery had to be imported, much new construction had to be undertaken. The industry had to draw heavily for funds on a state treasury which was then struggling with an inflated currency. The general impoverishment of the country was a tremendous handicap.

At first recovery was slow, but it steadily gathered momentum. The nationalization of the oil fields helped, for it created a unified industry in place of a great number of struggling economic units. It made possible a centralized plan, with economics in management, purchase and storage of supplies, transportation, selling, etc. The restoration of the currency to a gold basis in the spring of 1924 also helped materially in a business sense.

The best available technicians were summoned to the management and under their direction the industry was built up conservatively, immediate productivity being subordinated to permanent improvements. Before the end of 1923 the industry ceased to be a burden on the state treasury, and for the fiscal year 1923-24, despite the large sums expended for improvements and extensions, with deductions for interest, reserves, etc., it showed a net profit of upwards of $1,500,000. At present the industry is working on a five-year plan of development, leading up to a production of 17,000,000 metric tons (about 120,000,000 bbls.), nearly double the pre-war output, in the year 1930. During the past fiscal year the rate of production called for under the plan has been exceeded. During the current fiscal year the industry will expend $58,500,000 for major construction work as compared with $31,500,000 in 1924-25. Imports of equipment and machinery during the current fiscal year will be about $13,000,000.

Producing Divisions

For productive purposes the industry is divided into three units covering the three principal fields. There are the Azerbaijan Oil Trust (including the famous Baku fields), the Grozny Oil Trust and the Emba Oil Trust. The directors of each of these trusts are held responsible for results, in production, development and economics in their own field. In the matter of getting results there is distinct competition, which extends through the personnel as it does in separate units of large economic aggregations in the United States. Executive decisions are made by experts and technicians. Production outside of the three big trusts amounts to little over 1 per cent of the total. The Oil Syndicate, of nation-wide scope, on which the three producing trusts are represented, is responsible for marketing and purchases for the industry, and for its direction on a national scale.

The number of wells working in the three fields in August last was 2,380. In 1913 wells in operation averaged 3,775.

Drillings during the first 11 months of the fiscal year 1924-25 were 520,920 feet, compared with 401,639 feet during the entire fiscal year 1923-24. For the current fiscal year it is planned to drill 784,000 feet, which is about equal to the 1913 figure of 788,350 feet. About 60 per cent of the drilling is now done with rotary drills and 40 per cent with percussion drills.

Modern Methods Employed

During the past two years the old bailing methods have been rapidly discarded. At the beginning of 1925 only about 20 per cent of the wells were fitted with deep pumps. By October 1 deep pumps had been installed in nearly half of the wells. A technician attached to the oil industry, writing in "Economic Life" (Moscow) states that the changes in the pumping system effected in the Baku fields in Azerbaijan during the past year have virtually revolutionized production.

The modernization of the methods of exploitation has steadily gained momentum. By the end of 1924, 80 miles of light railways had been built in the Baku fields alone. By September, 1925, 90 per cent of the wells operated by the Azerbaijan Oil Trust had been electrified, and between 50 and 60 per cent of those of Grozny. During 1924 the oil industry imported from the United States drilling machinery and equipment worth $1,000,000. During the first nine months of 1925 the Amtorg Trading Corp. of New York reported that it had purchased for the Soviet oil industry machinery and equipment valued at $2,517,437. During the past two years several groups of Soviet oil experts have visited the United States, making an intensive study of American methods.

New pipe lines are projected from Baku to Batum, paralleling the old line, and from Grozny to the Black Sea port of Tuapse. The latter is to be completed in 1928. Preliminary work is already in progress.

Of the three large trusts the output of the Azerbaijan trust is 67 per cent of the total, Grozny 30 per cent, Emba 3 per cent. In the middle of the past year many of the old wells of the Azerbaijan trust were found to be exhausted to an unexpected degree. This held back production to some extent. On the other hand, in the Grozny fields, 60 per cent of the production was from gushers.

Refineries Being Built

When the oil fields were nationalized there were 36 refineries in the Baku fields. There were additional refineries in Grozny, at the Black Sea ports of Baku, Novorossisk and Tuapse, and the Caspian port of Rakusha, to which the oil from Emba feeds by pipe line. Many of the refineries were in bad condition. New ones have been built in the Black Sea ports and at the fields, but still others are needed for the expansion of the industry. The need is particularly acute in the Grozny fields, where production has increased more than elsewhere. Modern cracking plants for the production of gasoline have been a feature of the new equipment.

The industry has been hampered up to the past year by the transport situation. The railroads were restored to a fair workable basis as early as 1922, but the Volga fleet, which transports the oil to broad stretches of the interior, had fallen into disrepair, and the vessels of the export oil fleet had, since the beginning of the war, either been held in foreign harbors or lain rusting at the wharves of the Black Sea ports. The river vessels have been rehabilitated, the export fleet has been restored to working condition, and a progressive program for building new tankers is under way.

The character of Soviet oil exports appears to be undergoing a marked change. Exports of kerosene are declining relatively, and exports of fuel oil and gasoline are increasing greatly. During the first nine months of the fiscal year 1923-24 kerosene furnished 48 per cent of the oil exports; during the same period of 1924-25 it had dropped to 30 per cent. In the first nine months of 1923-24 fuel oils represented 4.6 per cent of the oil exports, gasoline and ligroin 20 per cent; in the same period of 1924-25 fuel oils rose to 29 per cent of the exports and gasoline to 22.3 per cent.

Growth of Exports

The comparative figures for these exports are as follows:

Petroleum Prod.	Exports for 9 mos. of 1924-25 Met. tons	Exports for 9 mos. of 1923-24 Met. tons	Per-cent-age increase
Kerosene	275,900	248,300	11.1
Benzines and Ligroin	210,600	102,800	104.8
Machine oil	73,100	57,400	27.3
Solar oil	57,100	42,200	35.4
Other oils, residue lubricants and petroleum pitch	14,300	9,300	53.2
Fuel oil and gas Oil	271,700	23,700	1044.7
Crude petroleum	40,500	30,400	33.3
Total	943,200	514,100	83.4

(Continued on Page 144)

PROTEST AGAINST PETROLEUM BILL PENDING BEFORE MEXICAN SENATE

By L. M. Fanning

The modified alien property bill passed by the Mexican Chamber of Deputies and now pending in the Mexican Senate is expected to be protested against by the Government of the United States of America and American petroleum companies with properties in Mexico, as violating certain property rights. The original bill submitted by President Calles as a regulatory measure of Fraction 1 of Article 27 of the Mexican Constitution provided for the Mexicanization of oil and mining companies in "prohibited" zones was published in The Oil and Gas Journal of October 29. This bill was withdrawn by the president following protests, and the modified bill substituted. In its general terms the new bill was passed by the Chamber of Deputies on November 13 and transmitted to the Senate. In its present form the project relates in part to Fraction 4, as well as Fraction 1, of Article 27 of the Constitution.

Washington advices state that Secretary of State Kellogg has issued general instructions to Ambassador Sheffield at Mexico City relative to the legislation pending regarding ownership of lands and waters within the limits of the national territory of Mexico. The instructions have been necessarily general because there is as yet no certainty as to the final form in which the pending legislation may be enacted.

The new bill apparently eliminates the retroactive feature which has brought vigorous protests against its predecessors under the much-disputed article of the Mexican Constitution. Coupled with the provision that foreign holders of land or stock in land owning companies legally acquired prior to enactment, however, is a requirement that heirs, to get possession of such holdings, must appear before the Mexican Foreign Office and waive the right to appeal to their home governments.

The Washington government has consistently held that no American citizen is legally capable of signing away the right of protection by his Government and it has been pointed out that the waiving of such right, as proposed, will be obligatory before heirs may take possession of their property. Mexican Ambassador Telles, at Washington, states, however, that the provision does not predicate the elimination of diplomatic protest in case of a denial of justice, but provides only that Mexican justice must be exhausted before such diplomatic interference is brought in.

Full Text of New Bill

The full text of the new bill now pending before the Senate follows:

Article 1. No foreigner may acquire ownership (dominio directo) over lands and waters within a strip of one hundred kilometers wide along the frontiers and fifty kilometers wide along the sea coasts, nor be interested in (ser socio) Mexican companies which may acquire such ownership (dominio) within the said strip.

Article 2. In order that any foreigner may form part (formar parte) of a Mexican company which holds or may acquire ownership (dominio) of lands,

(Continued on Page 144)

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We shall be glad to send you copies of the several engineering articles and Walworth Sigma Steel Bulletins which describe this test and its results in full.

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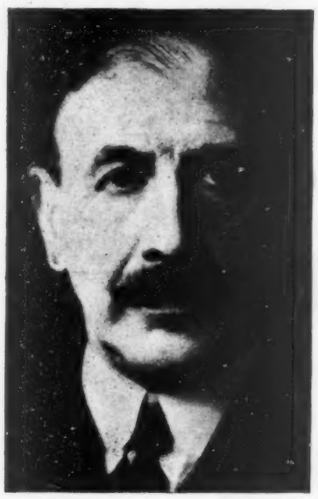

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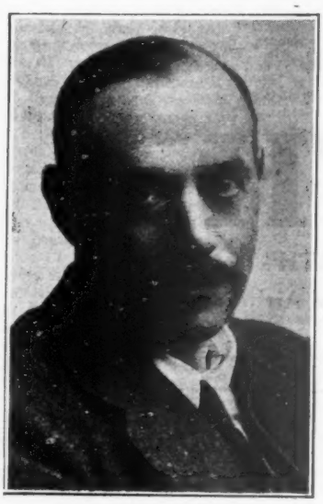

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WORLD PRODUCTION OF CRUDE PETROLEUM

(Continued from Page 75)

be in one or more of these 10 countries. Production for each year is given in millions of barrels:

Western Hemisphere	1920	1921	1922	1923	1924
United States	443	472	558	732	714
Mexico	164	193	182	150	139
Venezuela	..	1	2	4	9
Peru	3	4	5	6	8
Argentina	2	2	3	3	4
Total	612	672	750	895	874
Eastern Hemisphere					
Russia	25	29	36	39	45
Persia	12	17	22	29	32
*D. E. I.	17	17	17	20	20
Rumania	7	8	10	11	13
Poland	6	5	5	5	6
Total	67	76	90	104	116

*Dutch East Indies.

Western Hemisphere

In the Western Hemisphere we find that, in five years, the United States increased its yearly production 271,000,000 bbls.—with about 36,000,000-bbl. increase in 1925—a 6-year total of 307,000,000 bbls. In 1921 Mexico passed what up to the present time is its peak—and from which it had dropped 54,000,000 bbls. by the end of 1924.

Venezuela got in the "million-barrels-a-year" class in 1921 and produced 9,000,000 bbls. in 1924. Peru has increased her production 5,000,000 bbls. in 5 years—while Argentina has increased 2,000,000 bbls.

Of these four leading countries (aside from the Uniited States) Mexico lost 54,000,000 bbls. within the same time that the other countries gained 14,000,000 bbls.

And so, for the present at least, the United States is the bulwark of the Western Hemisphere.

Eastern Hemisphere

Turning to the Eastern Hemisphere we find that Russia's production in 1921 (25,000,000 bbls.) was the smallest since 1889—with a peak of 85,000,000 bbls. in 1901. In these 5 years Russia's production increased 20,000,000 bbls.

In the same period Persia's output has increased 20,000,000 bbls.—the Dutch East Indies, 3,000,000—Rumania, 6,000,000—with Poland stationary at about 6,000,000 bbls. a year.

In the last five years these five leading countries in the Eastern Hemisphere have increased their production 49,000,000 bbls. In the Western Hemisphere the five-year increase has been 262,000,000 bbls.

However, with the industrial situation in the Eastern Hemisphere rapidly shaping itself along sound, progressive lines, we may reasonably expect that not only the oil output but the oil markets of this part of the world will show large "percentage" gains in the coming years.

The financial connection between the oil industry in the United States and Mexico is much closer than their geographic connection—and therefore, in any world survey of oil, we can consider their combined production (over 73 per cent of the world total) as the vast current supply upon which the world at large must continue to depend for its major supply of crude oil for at least a good many years to come.

And while the total annual production of some of the other countries may today bulk small in comparison with Mexico, or the United States, yet the discovery of new foreign oil fields—a form of "international wildcatting"—is just as vital to the world as a whole as is the work of the American wildcatter to the production of the United States.

In the aggregate, the oil markets of the world are today calling for roughly about 10 per cent more finished products each year.

Whether or not this means that about 10 per cent more crude oil will go through the refineries will be answered by the refiners.

But of this we may be certain, that one of the surest and most dependable things in the industrial fabric of the world is the development and expansion of its markets.

CALIFORNIA OIL FIELD OPERATIONS FOR NOVEMBER, 1925

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for November amounted to 19,095,907 bbls., an average of 636,530 bbls. per day. This is a decrease of 9,118 bbls. per day under October production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 1,338,845 bbls. The total stocks at the end of the month were 152,360,730 bbls. The total stock increase for 1925, up to November 30, was 27,338,766 bbls. Comparative figures as of November 30, 1925, October 31, 1925, and November 30, 1924, are shown in detail on the second page of this report.

Eighty-five wells were completed during the month with an initial daily production of 28,404 bbls., compared with 69 wells completed during October with an initial production of 35,678 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons.)

District—	Barrels per Month	Daily Average Nov., 1925	Daily Average Oct., 1925	Daily Average Nov., 1924
Kern River	373,743	12,458	12,421	18,113
McKittrick	171,543	5,718	5,614	5,802
Midway-Sunset	2,836,254	96,208	100,239	109,037
Elk Hills	903,132	30,104	27,043	38,417
Lost Hills-Belridge	136,783	4,559	4,569	4,839
Coalinga	571,103	19,037	19,546	24,859
Wheeler Ridge	27,152	905	1,018	850
Watsonville	1,725	58	58	57
Santa Maria	169,115	5,637	6,547	7,829
Summerland	3,855	129	129	146
Ventura-Newhall	1,104,695	36,823	32,308	11,265
Los Angeles-Salt Lake	59,764	1,992	1,961	2,240
Whittier	61,744	2,058	2,034	2,113
Fullerton	399,433	13,314	13,312	11,645
Coyote	523,427	17,447	18,155	20,741
Santa Fe Springs	1,551,221	51,707	53,479	53,097
Montebello	556,094	18,536	19,225	16,906
Richfield	420,434	14,014	12,735	11,457
Huntington Beach	1,363,923	45,464	44,881	40,591
Long Beach	3,228,625	107,621	104,331	128,464
Torrance	966,936	32,231	32,401	45,586
Dominguez	809,507	26,984	27,665	33,767
Rosecrans	684,955	22,832	25,437	4,309
Inglewood	2,118,643	70,621	80,468	100
Newport	2,101	70	71	.....
Total	19,095,907	636,530	645,648	592,234
October	20,015,076	645,648		
Decrease	919,169	9,118		

STOCKS

	Nov. 30, 1925	Oct. 31, 1925	Nov. Stock Increase	Nov. 30, 1924
Heavy crude, heavier than 20 degrees A.P.I., including all grades of fuel	82,149,489	81,287,549	861,940	55,828,377
Refinable crude, 20 degrees A.P.I. and lighter	44,057,343	43,401,862	655,481	40,946,221
Gasoline	10,015,112	9,935,079	80,033	10,630,599
Naphtha distillates	6,373,852	6,478,634	*104,782	10,458,267
All other stocks	9,764,934	9,918,761	*153,827	6,081,755
Total all stocks	152,360,730	151,021,885	1,338,845	123,945,219

*Decrease.

DEVELOPMENT

District—	New Rigs Up	Active Drill'g	Comp.	Daily Initial Output	Active Prod'g	Abd. Wells Drlrs.	Abd. Wells Prdrs.
Kern River	...	4	1	8	1,603	...	...
McKittrick	...	8	...	.....	302	...	...
Midway-Sunset	4	40	18	2,727	2,914	1	3
Elk Hills	3	5	3	1,450	227	...	...
Lost Hills-Belridge	1	3	...	.....	298	...	...
Coalinga	1	4	3	136	920	...	1
Wheeler Ridge	2	4	...	.....	21	...	...
Watsonville	...	...	...	.....	6	...	...
Santa Maria	...	8	2	260	251	...	...
Summerland	...	...	...	.....	135	...	...
Ventura-Newhall	8	36	2	2,606	588	5	...
Los Angeles-Salt Lake	...	...	...	.....	384	...	...
Whittier	...	3	2	87	189	...	...
Fullerton	1	8	2	1,715	400	...	...
Coyote	1	2	...	.....	209	...	1
Santa Fe Springs	2	4	...	.....	354	1	3
Montebello	2	6	3	415	162	...	...
Richfield	2	4	...	.....	185	...	...
Huntington Beach	3	12	4	1,433	340	1	2
Long Beach	43	69	22	8,284	587	4	1
Torrance	4	7	7	787	607	...	1
Dominguez	...	2	...	.....	64	1	1
Rosecrans	1	28	8	2,010	109	1	...
Inglewood	13	11	7	6,461	162	1	1
Newport	3	3	1	25	12	2	...
Miscellaneous drilling	8	92	...	.....	.....	22	...
November	102	363	85	28,404	11,029	39	14
October	91	372	69	35,678	11,066	32	7
Decrease	*11	9	*16	7,274	37	*7	*7
Average for year 1924	103	510	103	42,412	10,903	28	21
Average for year 1923	111	759	82	114,690	8,928	24	
Average for year 1922	115	605	67	43,700	9,410	17	
Average for year 1921	90	536	57	15,631	9,425	14	
Average for year 1920	77	403	49	14,125	9,299	13	

*Increase.

OPERATORS PLANNING BUSY YEAR IN PAYNE

By Whit

PAYNE, Ohio, Dec. 26.—A general survey of the Payne Field of Paulding County, Ohio, and the Ledford Extension to the field, which crosses the Ohio-Indiana State line in Maumee Township, Allen County, Indiana, shows that it looks as though it will cover a large area following the completion some time ago by Ogle & Wigdon on the Steckler farm, Section 32, Harrison Township, Paulding County, about midway between the Payne Field proper and the Ledford Extension where two good producers were found on the Gerber farm, Section 16, Maumee Township, Allen County, on the Indiana side. In the same township, on the D. Helmke farm, Section 34, and between the two Gerber wells and the Steckler well, is a producer, and makes the several miles between the wells look good and it will be thoroughly explored, as will the gas production area southwest of Payne, in Benton Township, Paulding County. The wells on the Indiana side also show a nice gas pressure. Everything appears to be on the hustle in the field these days regardless of the cold weather.

C. E. Ledford and John T. Schenck are now devoting their time in the Payne Field and are developing on a large scale. After having drilled several good producers of oil and gas they have turned their attention to the development and marketing of the gas from the extensive gas field in and around Payne. The largest gas well so far drilled shows a volume of 2,000,000 feet, and a rock pressure of over 500 pounds. They have also bought the Paulding Light & Fuel Co.'s artificial gas plant at Paulding, Ohio, and will connect it with natural gas from the Payne Field after the first of January. The whole system when completed will involve the laying of some 60 miles of pipe line, principally 4 and 6-inch main feed lines, and will cost around $250,000. In addition to this they are erecting at Payne a large compressing plant where all the gas will be put through the compressor and the gasoline extracted. The tests of the gas for gasoline content shows an average of 2½ gallons to 1,000 feet of gas.

Mr. Ledford came to the Payne Field about one year ago and was one of the first operators to realize the possibilities of the Payne gas field and extended the field across the State line. John T. Schenck entered the field shortly after Mr. Ledford and at once became active. He owns the C. C. Springer lease with four wells and has a settled production around 20 bbls. daily. He contemplates drilling six more wells the coming year.

John D. Lamb, the original man to open the field, is elated at the prospects for the coming year. To John H. Harmon of Mansfield, Ohio, belongs a great deal of credit for the development of the Payne Field. Mr. Harmon will drill additional wells on his holdings for both oil and gas the coming year.

Fred Estes of Greenville, Ohio, has been active from the start and is developing his 600 acres in the gas territory.

Harry Manion entered the field the past summer and is extending his operations across the Maumee River to Allen County, Indiana. J. W. McIntosh of Paintsville, Ky., who drilled the first big gas well, has just completed another big gasser in No. 2 on the Brady farm, Section 8, Benton Township, Paulding County, and southwest of Payne. Mr. McIntosh is contemplating developing his entire acreage the coming year, since he now has a market for his gas.

"Doc" Thompson was also one of the first operators in the field and his production is now running around 16 bbls. a day, settled production, and 500,000 feet of gas which he has contracted with Ledford & Schenck to deliver to the compressor plant. A. S. Cochran came here about the middle of the summer and landed over on the Indiana side, 9 miles from the producing field, and opened the Gerber Pool, in Section 16, Maumee Township, Allen County. He is starting his third well. His company is now known as the Schuran Oil Co. Thomas Kneer, cashier of the Farmers & Citizens Banking Co., has lately secured large holdings in both the gas and oil territory and is preparing for extensive development.

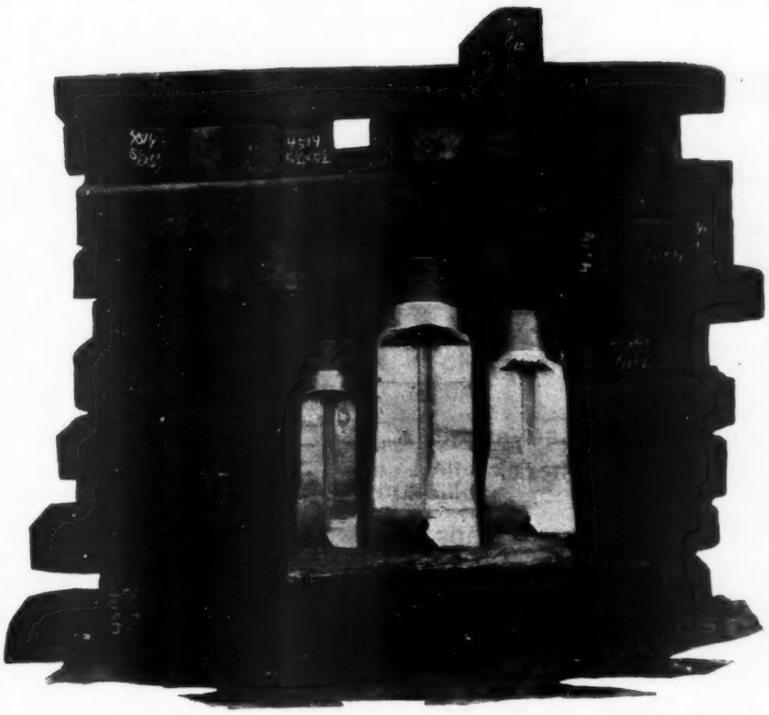
Cyrus Shumaker, owner of the electric light franchise at Payne, having sold his interest to New York parties, is preparing to devote his time and energy in developing his holdings recently secured in both the gas and oil territory. Ogle & Wigdon of Newark, Ohio, have secured some very valuable acreage on which they have completed two wells and are erecting a power and contemplate the drilling of several wells the coming year, midway between the Payne Field proper and the development in the Ledford Extension across on the Indiana side.

BUY FLOOD PROPERTY

BRADFORD, Pa., Dec. 26.—A 150-acre tract in Geiger Hollow, near Knapp Creek, containing 20 producing wells in the flood area was purchased in fee by H. H. Redfield, D. M. Braisted, W. H. Carey, R. C. Gleason, O. J. Hamlin and Guy McCoy of Smethport from Martin E. Healy, Mrs. Agnes Hartnett, Frank Hartnett, F. H. Stephens and Joseph Gallits. Consideration reported at $100,000.

GERMAN AIR LINES

The length of German air lines in 1922 was 3,224 miles; in 1923, 3,606 miles; in 1924, 4,149 miles; in 1925, the length has reached the remarkable total of 11,067 miles. Planes are operated daily during the summer season between practically all the principal commercial and industrial centers of Europe.



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RUMANIA DEVELOPMENTS HAVE GREAT IMPORTANCE

(Continued from Page 122)

ever, be considerable, and this fact, combined with the release of some of the finest oil lands in the country, cannot fail to bring about startling results.

Finally, the depth factor must not be lost sight of. The use of rotaries will encourage the practice of deep drilling, and it is now regarded as certain that many abandoned or neglected areas will be redrilled to tap sources which are now generally believed to exist. Other things being equal, deeper sources mean higher pressures and generally larger yields per acre and per well; consequently, interesting developments may be anticipated under this score.

Producing Problems

Among the most important problems awaiting a satisfactory solution in Rumania must be included that of production. The nearly universal system of extraction by bailing is extremely costly in power, labor and materials under normal conditions, but a further complication in Rumania results from the tendency of wells to deflection, thus increasing the wear and tear of materials such as ropes and bailers, and lowering the rate of yield. A determined effort is being made to introduce deep well pumps where the production is settled and sand has become reasonably stabilized. Already they are being employed in some of the old fields where the dregs of the oil sands are being abstracted, but it is certain that increased use will be made elsewhere in less depleted areas, when the particulars of these fields have been studied and means found for dealing with the obvious difficulties. So serious is the production question that on 2,000 feet territory wells cannot be profitably bailed when the yield falls below 20 bbls. daily, a quantity which far exceeds the average of many important oil fields of the world.

The value of early control of wells is much debated in Rumania. Old time operators still insist that large yields can only be obtained by unrestricted flow and by encouraging the ejection of sand with its attendant dangers. Only in this way, it is maintained, can an adequate feeder system be built up which insures large initial and ultimate yields. It is difficult to combat this point as it obeys the admitted law that the ultimate yield of a well bears a direct relationship to the initial regardless of other geological considerations. But in the case of Rumania there is always a question whether the well will outlast the eruptions, and in the majority of cases it does not; consequently the above law cannot apply.

The majority of eruptive wells in Rumania get their casing damaged or deflected during their early life, and, in consequence, they rarely obtain the benefit anticipated from unrestricted flow. They may be irretrievably damaged within the first few hours or days of their life, and are always a source of great expense and anxiety. We are then brought to the subject of controlled flow, which is gaining in favor.

It might be mentioned that many new wells are now swabbed when they have ceased to give natural flows. This process results in high yields—100 to 200 tons daily being very common—but it also causes violent flows through the swab with consequent inrushes of sand which must endanger the casing. Great quantities of sand are expelled by these flows, so that this method of production leads to a continuation of the process of opening up the sands.

Conditions Changing

There is no disposition to argue that there has been no justification for the past attitude of producers, but the conditions are changing with increasing depths and more costly wells. As before stated, the deeper sands are probably richer, the gas pressures are higher and the loss of a well by damage becomes a more serious matter. By controlling the flow of oil through nipples so that the quantity of sand is reduced to some acceptable amount, it may be possible to retain a pressure on the sands and secure an ultimate flow which on the average exceeds that of uncontrolled flow. Flow pipes with nipple control have been, it is stated, satisfactorily used at Ceptura, Ochiuri and Moreni, and with further experience it is likely that more will be installed. It is thought that sand screens may be usefully employed in some areas, and their trial is certainly to be recommended. Where the oil sands are fine, regular in grade and broken up by clay bands, screens are unlikely to be successful, but in any case their employment can only be recommended if the wells are controlled during the flowing period. It is certain that air-lift could be employed with great success in many wells where a high fluid level is maintained.

Among recent innovations may be mentioned the increased use of gas as fuel and for gas-gasoline extraction. In most of the oil fields the casinghead gases contain from 1 to 3 gallons of gas-gasoline per 1,000 feet. The richer gases can be profitably handled by compression plants, the leaner by absorption methods. The charcoal absorption plant at Moreni is functioning satisfactorily, also the Credit-Moniere compression plant on the same field. Exhausters are placed at the flowing and swabbing wells for leading away the gas, and gas engines are being more largely used for power purposes.

A serious trial of mining methods for obtaining oil will be made by the Steaua Romana at Campina, where the oil sands are now commercially exhausted by drilled wells. Up to date mining gear is being installed, and the experiment will be watched with much interest.

Geological Discoveries

Recent geological discoveries in Rumania are no less remarkable than changes in technique. The striking of payable oil in several new districts and the penetration of new sands at increased depths in the oil fields have caused a glut of oil which is discomforting to producers and refiners. With several large flowing wells occupying the main pipe lines to Ploesti some nervousness was recently felt about completing more wells in the deep sands. Everywhere one heard complaints of lack of storage, and it was only after satisfying the Government that the situation was serious that permits were given for the export of fuel oil which was filling up all refinery storage and was likely to force a shut down of the refineries. The restrictions on export of oil products has been a bone of contention with operators for a long time, as they were prevented from benefiting from world's prices. It would appear that the time is approaching when outside markets will be sought to relieve congestion, as the Government regulations for internal consumption insure supplies of essential products to the inhabitants at moderate prices. It is, however, clear that much greater provision must be made for movements of oil than exist today. Railway carriage needs speeding up, and more pipe lines must be laid if the country is to derive full benefit from the developments in progress.

The chief producing fields today are Moreni, Gura Ocenitzei, Runcu, Ochiuri, Tsintea and Baicoi. Moreni and its extensions have acquired very great importance. For a distance of several miles prolific oil sands have been encountered both north and south of the salt core which plunges and disappears both east of Bana and west of Gura Ocnitzei. Between these limits gaps have been gradually filled in until a very large field has now been practically proved by drilling. South of the salt the Dacic beds are productive the whole way, but north of the salt oil is obtained from beds of Meotic age at depths approximating 3,000 feet. A fair amount of oil was also obtained from beds of Wacic age at Bana on the north of the salt. The two strips of oil territory on the opposing flanks of the salt are likely to give way very large yields now that the State lands have been released for development.

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tain, but a deeper, rich sand struck in three far separated wells has given the area a new lease of life. Even this sand may not exhaust the possibilities at depth, as the Meotic series may yield further surprises. The favorable results at Moreni-Stavropoleos not only encourage the belief that equally important wells will be struck in the Bana sector, but it opens up encouraging prospects on the south of the salt at Tzuicani, and especially in the old field, where the Dacic sands are now approaching exhaustion. Wells would be deep but, possibly, not outside the reach of economic development by rotary if yields are high and prices good. The westward progress of operations in the Dacic beds south of the salt continues with striking success, where initial yields of 100 to 200 tons are common.

The Meotic Formations

One of the noteworthy features connected with Rumanian geology is the nearby uniform success that attends the exploitation of the Meotic formations. Disregarding the vexed question of origin of oil, which is variously attributed to the Miocene Salifere, migration from depth, or shales in the Meotian, it is clear that this series presents some of the best prospects of the country. The Meotic developments are not being followed without concern, as the oils are generally rich in paraffin and present troubles both in transport and in refining. In the cool weather some of the Meotic oils solidify or have to be warmed before they can be pumped, and care has to be taken to clear the pipe lines unless well diluted with non-paraffin oils. Only the Steaua Romana refinery is properly equipped for dealing with paraffinous oils, which are not liked. As the country is certain to produce increasing quantities of waxy crude, and the extraction of wax entails an expenditure on plant and manufacture scarcely justified by prices of wax, it is likely that much will be cracked down in the refineries.

The chief fields yielding from Meotic beds are Moreni (Stavropoleos), Runcu, Chiciura, Bushtenari, Campina, Filipeshti and Arbanasi, but recently deep drilling has proved the existence of Meotic oil at Ochiuri and at Ceptura, and it is now generally believed that Meotic oil will be found at depth in the fields of Baicoi, Tsintea and south of the salt at Moreni. If this later expectation is realized the production of paraffinous oils of Meotic origin will be largely increased.

A fair amount of wildcatting is in progress, and some useful results may safely be anticipated. Two important new fields have been virtually proved—namely, the Pacuretz by the Romana-Americana and the Ceptura by the Steaua Romana—while Sospiro have met with some success on outside blocks. Two conveniently located gas fields have been disclosed at Aricesti and Boldesti, from which places pipe lines have been led to Polesti for feeding the refineries with fuel.

25,000,000 BARRELS LESS OUTPUT IN MEXICO

(Continued from Page 82)

completing a topping plant of 12,000 bbls. capacity at Tampico, to be followed later by one at its Port Lobos terminal of similar capacity. The latter has been discarded and dismantled.

It might be remarked in passing that back in Ebano in the early days (say 1906) an asphalt plant was constructed by the Doheny interests that made some asphalt history for a while. Tampico, City of Mexico and other cities in the Republic are paved with Ebano asphalt; and much of it was exported. It has not been used on a large scale, however, for some years.

Plants Shut Down

The above describes refining plants in Mexico that are active. There are others. The failure of many south fields pools back in 1921-22 played sad havoc with the hopes of other companies, who constructed topping plants. The dismantling at Port Lobos of The Texas Co. plant has been remarked. A little later a subsidiary of the Atlantic Refining Co. constructed a big topping plant of 30,000 bbls. capacity at Port Lobos. It had been used but little when the crude supply destined for it failed. A subsidiary of the Island Oil & Transport Corp., and later Agwi Companies (Atlantic Gulf Oil Corp.) constructed plants of 5,000 bbls. capacity each at their respective Port Lobos terminals, but they, too, have long been idle and are being more or less dismantled.

In Tampico, Cia. Mexicana-Holandesa La Corona (Royal Dutch Shell) constructed along about 1920 a splendid refinery of 30,000 bbls. capacity. It finally stopped operations last January, but it must be recalled that Mexican Eagle Oil Co., with its big 60,000-bbl. plant at Tampico, now belongs to the Royal Dutch Shell group, so two plants in one place was hardly an economic necessity. The products La Corona requires it gets from the Eagle plant. Another 30,000-bbl. topping plant that scarcely received a proper christening with crude is Continental Mexican Petroleum Co.'s (General Petroleum of California) which has long been idle.

Mexican Oils

As refining is practiced in Mexico today with the latest cracking methods a cut of 17½ per cent of gasoline can be obtained from South Fields crude (B. 21-22) when the full cut is made without special regard for illuminants. It will scale lower if illuminants are sought. All grades of lubricants can be obtained in fair proportion. With only the lighter products off the fuel oil is the big percentage, of course. While the oil is considered of asphaltic base say 1½ per cent paraffin is obtained, this wax being easily absorbed by the domestic market.

The heavier gravity crudes of the northern fields (B. 12-12.5 and some 14.5-Topila) can be cracked say for 7 per cent gasoline, and in at least one plant where some skillful mixing is done the residue after this "crack" is worked back into fuel oil of even higher degree than was the original and of less viscosity. The heavier crudes, in their natural state are splendid fuel oils; they have some grease; and as binders for roofing paper, road oils, etc., these oils are hard to equal. Of course, for the manufacture of asphalt they are splendid; but it is as fuel that their market potency is felt.

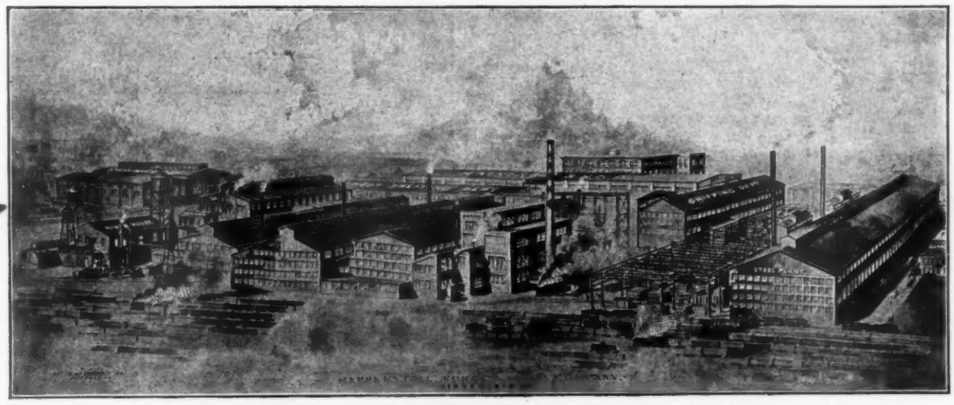
The Domestic Market

Mexico consumes say one and one-half millions of petroleum of its own production a month. Most of this is fuel oil, of which the National Railways is the largest single consumer. But Pierce Oil Corp., as the oldest caterer to domestic needs, has long had agencies for its products throughout the Republic; and then Mexican Eagle Oil Co. came along and even more thoroughly expanded the domestic business with agencies and representative merchants in smaller towns. Each company long since built its own tank cars for bulk agency shipments, while case goods also plays an important part. Then Huasteca Petroleum Co. entered the fuel trade with tank car shipments; to be followed now by catering with refined gasoline, lubricants and greases, especially here in Tampico and in the City of Mexico. About the same time the Royal Dutch Shell subsidiary, La Corona, entered the field in Tampico with the same line as the Huasteca.

Ebano, up until last October when its crude commenced to be a factor in exports, always sold its production at its loading racks, in tank cars, principally to the railways for fuel.

The only foreign company, that is "foreign" in the sense that it does not manufacture its products entirely from Mexican crude in its own plants in Mexico, that has been active for Mexican trade, is The Texas Co. (what is being done on the Pacific Coast of Mexico by foreign companies, if anything, I have no knowledge of). The Texas Co. brings in all refined products, except gasoline, in car shipments through the border ports. To Tampico and Vera Cruz it brings in shipments by vessel. Greases, lubricants and tar roofing paper are the principal items of its active selling list.

HEPPENSTALL



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FAST GROWTH OF THE AUTOMOBILE IN EUROPE

(Continued from Page 95)

Outside of the United States, the countries which manufacture gasoline from locally prdouced crude oil in sufficient quantity to supply all or a large part of the domestic demand and leave a surplus for export are Mexico, Peru and Trinidad, in the Western Hemisphere; Russia, Poland and Rumania, in Europe; and India, Persia and Dutch East Indies and British Boreno (Sarawak) in Asia.

Venezuelan oil is refined to an increasing extent in that country, but a larger proportion is exported as crude oil, chiefly to Curacao (Dutch West Indies) for refining, and the refined products are exported from that point. More recenly Venezuelan crude is being shipped in increasing quantity to the United States. Colombia produces from domestic crude refined products to supply that country and with the completion of a pipe line from the oil fields to the coast will be exporting crude oil for refining principally in the United States and Canada.

In portions of some of these countries, as northern Persia and the west coasts of Colombia and Mexico and the northern border of Mexico, gasoline is still imported because of inadequate transportation facilities within the country or more convenient transportation from abroad, although the domestic output would otherwise render imports unnecessary.

Have Limited Supply

Countries which produce gasoline from domestic crude oil in sufficient quantities to supply a part of local requirements, but without a supply available for export to any extent include, Ecuador, Argentina and Japan, and to a lesser degree (in proportion to consumption) France, Italy, Canada and Czechoslovakia. A domestic refining industry operating largely or entirely on imported crude oil, and supplying gasoline to the domestic market has been established in England, Canada, Austria, Hungary and Curacao.

Canada imports considerable quantities of crude petroleum from Peru and the United States, the products of which are consumed almost entirely within the country. In England the refining industry has expanded rapidly within the last few years. The Austrian and Hungarian refineries, which before the war had a supply of crude within the Austro-Hungarian Empire from the Galician oil fields, are now dependent on foreign oil, and their operations have been very considerably curtailed. Australia has also begun to refine imported crude oil, while refineries in Italy and Czechoslovakia are largely dependent on foreign crude. Egypt refines both domestic and imported petroleum, and is both an importer and exporter of gasoline.

In connection with the third important change that may be expected, involving transportation, the largest part of the present overseas tanker movement involves the carriage of refined products. The mission of the tanker will change as refineries are built and expanded in the large consuming countries. It will be used mainly to transport crude oil from the oil fields to the refineries.

The suddenness with which the revolutionary changes as outlined above may occur depends upon economic conditions. Actually the changes are now occurring, but so far they have been of a gradual nature. The expansion of the refining industry on the British Isles is a striking illustration. It has been made possible by an assured source of supply. That it would have been even greater during the last few years is probable had it not been for the overproduction of oil in this country.

Effect on U. S. Exports

The effect of domestic refining on importation of gasoline is not fully revealed by the statistics inasmuch as consumption in the United Kingdom has made such heavy gains that imports have actually been increasing. The country imported about 546,000,000 U. S. gals. of Persian crude oil in 1924, which if, upon refining, yielded at the same average rate as crude oil run by United States refineries, is equivalent to 185,000,000 gals. of gasoline. This compares with 369,000,000 gals. of gasoline shipped into the United Kingdom from the United States last year. Persian crude has a high gasoline content, estimated as great as 60 per cent on straight refining, and therefore the actual yield is probably considerably higher than the estimate given.

Persia, as a source of crude oil supply for European refineries, has great potentialities. The restrictive factor is that present Persian production is entirely in the hands of one company, the Anglo-Persian Oil Co., but this company is constantly expanding its refining activity.

Russia is not only capable of supplying crude oil for outside refineries, but, having a relatively large refining industry, is increasingly active in furnishing gasoline to other European countries.

Russia alone, according to geological estimates, has petroleum resources rivaling those of the United States. If to these sources are added the petroleum supplies of Poland and Rumania, it is seen that Europe has its home supply. That this supply has not been developed so that Europe has attained an independent position as regards petroleum is probably due as much to the political divisions of the continent as to commercial considerations.

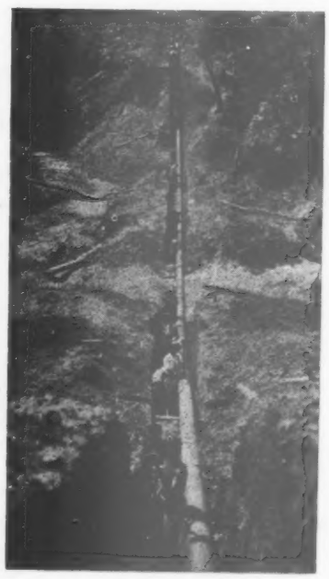
This situation presents a sharp contrast to the development of petroleum in a homogeneous country such as the United States. Development has been retarded by such factors as taxation for revenue and artificial trade barriers. However, there has not been the urge which has accounted for much in the development of the American petroleum industry, namely, the fast growth of the automobile. This urge now appears to be at hand, and it means a new era in the world's petroleum industry.

COLOMBIA PIPE LINE READY ABOUT MAY 1

(Continued from Page 110)

dap Prescott pump driven by a 500-h.p. De La Vergne engine.

Each station will have two 31,000-bbl. working tanks with the exception of the initial station at Galan, where five 55,000-bbl. tanks will be used. Mamonal terminal will be supplied with eleven 80,-



About Five Miles From the Terminal

000-bbl. storage tanks, this terminal being located on Cartagena Bay about 10 miles across from Cartagena.

Provisions are being made for loading tank steamers from a reinforced concrete pier now being built, at which pier there will be sufficient water to permit the mooring of the largest tank steamer afloat. The oil will be loaded into the steamers from the pumping station in which will be installed four Prescott pumps, each having a capacity of about 3,300 bbls. per hour, giving a loading rate, with three units running, of about 10,000 bbls. per hour.

The minimum atmospheric temperature is about 70 degrees Fahrenheit, the maximum about 110 degrees, the average being about 85 degrees. The average humidity is about 75 degrees. The crudes now

Rough Going in the Yucal Hills

being produced vary from 25.5 to 29 degrees Baume. The Saybolt Universal Viscosity at 70 degrees Fahrenheit of the former is 220 seconds and of the latter 93 seconds, the average at this temperature being about 172 seconds.

The eight pumping stations have as far as possible been located at the economic distance apart for minimum installation and operating costs but, due to physical conditions, it has not been possible to locate all stations at the desired points. For that reason there will be a small amount of loop laid in both the first and last pumping sections in order to more nearly balance the pumping capacity of the different sections.

There have been no outstanding engineering features to be overcome, the principal difficulty being transportation, inasmuch as about 65,000 tons of material has to be transported from the United States to Cartagena and from that point rehandled many times before it is discharged on the river banks from the barges, after which it has to be hauled by means of tractors pulling Athey and eight-wheeled wagons back from the river to the right of way or to the pumping stations.

Twenty-five 10-ton Holt tractors are being used to keep the work of stringing the pipe ahead of the laying. The laying itself is being done very largely by Buckeye and Mahoney pipe machines.

The first shipment of pipe left New York on March 2, 1925, arriving at Cartagena on March 20, being barged across the bay and the work of stringing immediately started. The first joint was layed on April 4, and it is expected, as stated, the line will be in operation by May 1, 1926.

ALASKA'S ONE REFINERY REPORTS GOOD DEMAND

The Department of the Interior announces, through the geological survey, that all the petroleum produced in Alaska in 1925 continued to come from the wells of the Chilkat Oil Co. This company's property is near Katalla, where, in addition to the oil wells, it operates a small refinery. The gasoline and distillate produced by the company are much in demand in the local market, as they are said to be of better grade than the usual commercial brands.

Exploration for petroleum continued to be conducted actively at several places in the territory. On the Alaska Peninsula drilling of the test well of the Standard Oil Co. of California on the Pearl Creek Dome was continued throughout the year and according to the latest reports available had been carried to the depth of about 5,000 feet, without, however, tapping a commercial supply of oil. Drilling by the Associated Oil Co. in a near by area is reported to have carried to a depth of about 3,200 feet. The geological survey has stated that the Salmon Creek-Bear Creek anticline, north of Jute Bay, and the Wide Bay anticline are favorable structural features to prospect and that wells drilled on either of these anticlines would start at a geologic horizon estimated at not less than 4,000 feet lower stratigraphically than the beds forming the upper part of the Pearl Creek Dome.

Plans for the thorough testing of the structure near the known petroleum seepages on Johnson Creek, in the Yakataga region, have been perfected by the General Petroleum Co. A camp was established there, and the necessary supplies and equipment were safely brought to the property. Storms during the fall delayed getting drilling under way as early as had been hoped, but according to the latest information much of the machinery had been set up and will be operated throughout the winter.

Hope of finding petroleum near the Chickaloon coal mine, in the upper Matanuska Valley, led to a drill being taken into that region. It seems unfortunate, in view of the many areas in Alaska were geologic conditions appear to be more favorable for the discovery of petroleum, that drilling for oil in the upper Matanuska Valley is attempted at this time.

Examination of Naval Petroleum Reserve No. 4, in northern Alaska, was continued by W. R. Smith, who was a member of the geological survey party that went overland during the winter and spent all of the summer in field work in this area. The area traversed was mainly the highlands of the Brooks Range and the plateau and lowlands of Colville River, to the north. Although no new seepages or other definite indications of petroleum were found in the area, Mr. Smith noted many places north of the Colville where excellent structural conditions would afford good collecting places for oil if it occurs in the adjacent rocks.

GROSS PRODUCTION TAX ON RESTRICTED LANDS

OKLAHOMA CITY, Okla., Dec. 26.—Money received by mineral right owners of restricted Indian lands in Oklahoma is subject to the gross production tax of 3 per cent, District Judge Lucius Babcock has held in passing on a case in which Jerry McCoy, a Chickasaw Indian, sought to be relieved from paying this tax.

The court held that oil so produced is personal and not real property, that while the land is restricted the oil is not. Restrictions were made by the Federal Government. McCoy will appeal to the Supreme Court.

It is said that probably 65 per cent of the oil produced in Oklahoma comes from restricted lands, including the former Osage Nation.

INCREASE IN OHIO RATE

PORTSMOUTH, Ohio, Dec. 26.—The Portsmouth Gas Co. has filed a new schedule of rates with the Public Utilities Commission, effective January 1, 1926. The new rates are an increase of about 10 cents per thousand cubic feet. The new rates specify a charge of 55 cents for the first 500 cubic feet consumed; 55 cents per thousand for consumption up to 49,500 cubic feet, and 47.5 cents per thousand for consumption over 50,000 cubic feet.

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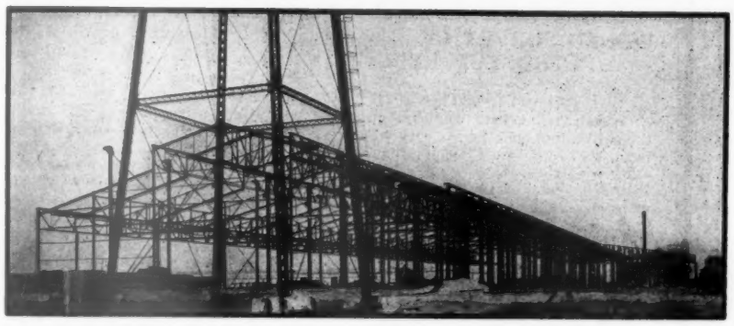
for the Oil and Gas Industry

View in Austin's Steel Fabricating Plant, Bliss Mill, located at Cleveland.



Construction view of a project handled complete by The Austin Company

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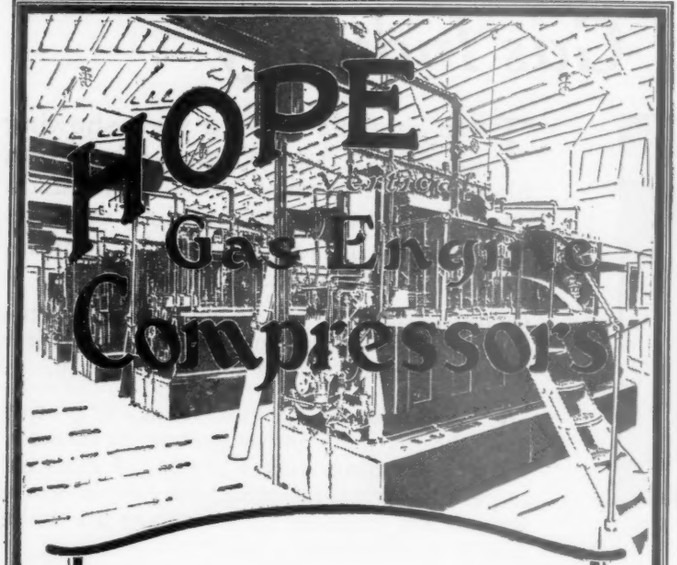

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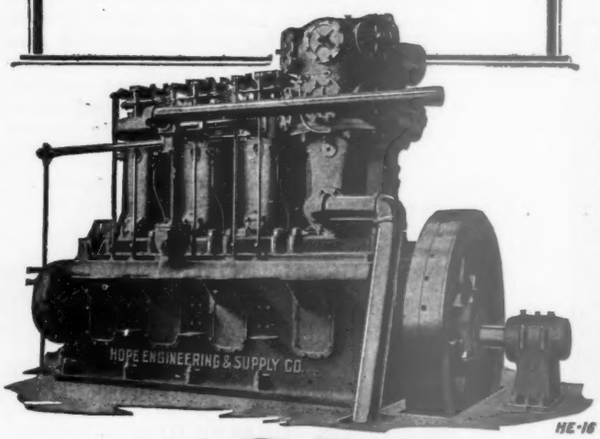

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PERUVIAN PETROLEUM PRODUCTION IN 1925

(Continued from Page 100)

large extent, prejudiced the territory in the eyes of other operators who might have become interested and the concessionaries affected have petitioned the Government to appoint an accredited petroleum geologist to examine their holdings and, if possible, dissipate any feeling of pessimism regarding their potentialities.

Outside of the coastal oil fields, there is little Peruvian activity except that, in parts of the interior, denouncements have been made and surveys are in progress.

It is generally considered, however, that the action of the Dutch-Shell is not so much a reflection on the value of the properties it had optioned, as a confession that the terms which had been exacted were much too onerous to admit of profitable exploitation.

Shipping at Talara, Peru.

WORLD SURVEY OF PETROLEUM REFINING

(Continued from Page 108)

-ble their refiners to compete, on anything like the same basis, with products from the very latest type refineries in other countries.

Probably one of the finest things that will come out of the stablization of finances in Europe will be the "rejuvenation" of her industries with the very latest type equipment and processes. And the profits that will come to the refiners in this new era of greater industrial efficiency, will be negligible in comparison with the benefits that will come to the circle of users that always widens as industrial efficiency increases.

Table 2—Refineries in the United States Rated at 25,000 Bbls. Daily Capacity or More

State—	City and Company—	Daily Cap.
California:	Avon, Associated Oil Co.	50,000
	Vernon, General Petroleum Corp.	55,000
	Watson, Pan American Petroleum Co.	40,000
	Martinez, Shell Co. of California	40,000
	Bakersfield, Standard Oil Co. of California	25,000
	El Segundo, Standard Oil Co. of California	100,000
	Richmond, Standard Oil Co. of California	100,000
	Oleum, Union Oil Co.	27,500
	Wilmington, Union Oil Co.	35,000
Indiana:	Whiting, Standard Oil Co. of Indiana	50,000
Illinois:	Wood River, Roxana Petroleum Corp.	26,000
Louisiana:	Distrahan, Mex Petroleum Corp.	25,000
	Baton Rouge, Standard Oil Co. of Louisiana	80,000
Maryland:	Baltimore, Standard Oil Co. of New Jersey	32,000
Massachusetts:	Fall River, New England O. R. Co.	30,000
New Jersey:	Three plants, Standard Oil Co. of New Jersey	180,000
	Bayonne, Tidewater Oil Co.	40,000
Oklahoma:	Tulsa, Mid-Continent Petroleum Corp.	35,000
Pennsylvania:	Point Breeze, Atlantic Refining Co.	50,000
Texas:	Port Arthur, Gulf Refining Co.	100,000
	Beaumont, Magnolia Petroleum Co.	40,000
	Port Arthur, The Texas Co.	45,000
Wyoming:	Casper, Midwest-Standard of Indiana	50,000
	Capacity of these 25 plants	**1,285,000**

Table 3—Distribution of Refineries by Rated Daily Capacities

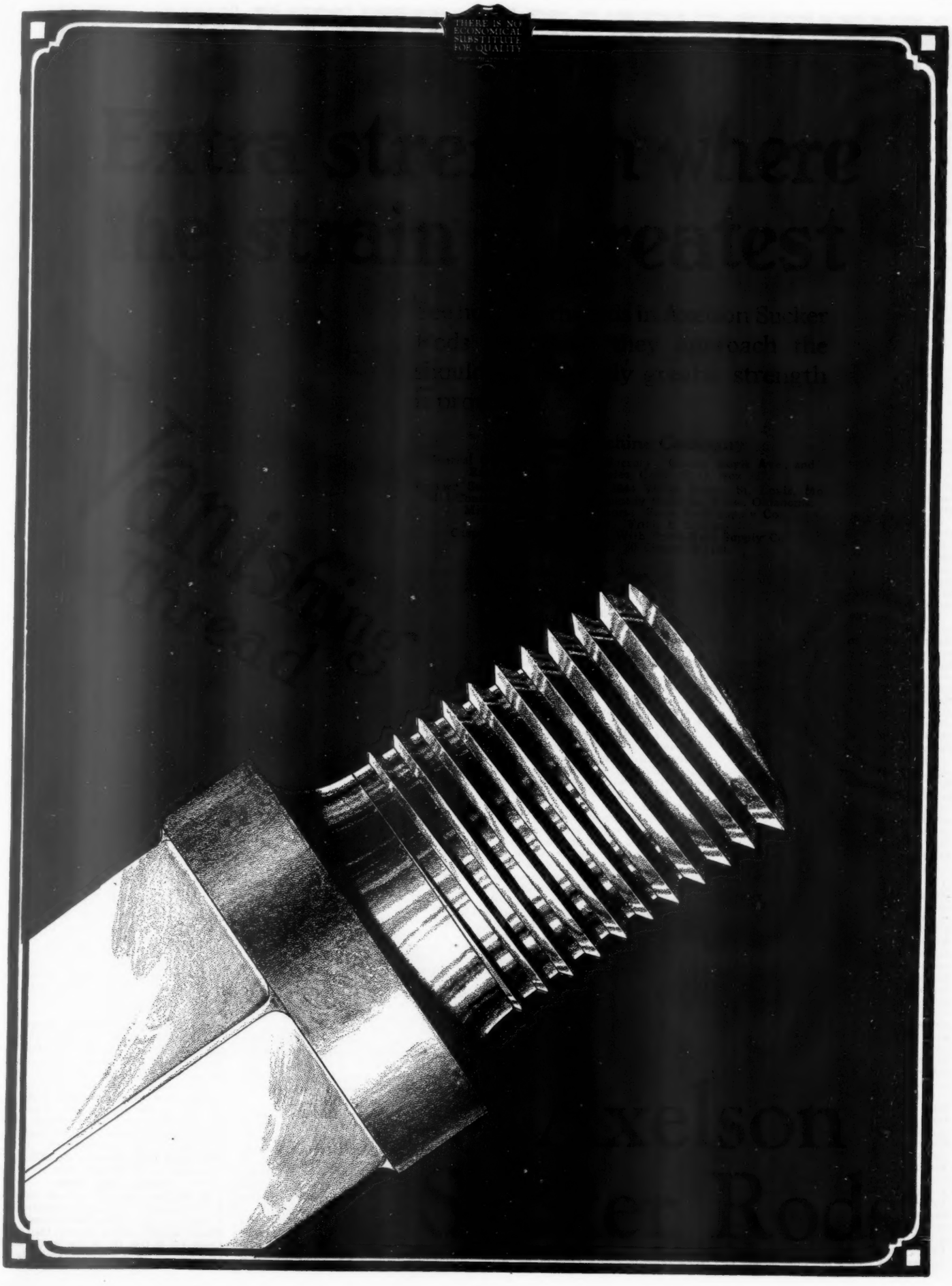
25	Refineries rated at 25,000 bbls. a day and up	1,285,500
21	Refineries rated at 11,000 bbls. to 24,000 bbls.	354,000
107	Refineries rated at 5,000 bbls. to 10,000 bbls.	767,000
431	Refineries rated under 5,000 bbls. a day	627,500
	Total rated daily capacity	**3,034,000**
	Average daily crude runs, 1924	**1,759,000**
	Capacity of 46 refineries rated at 11,000 bbls. and up	**1,639,500**

England's Position

Prior to the World War, with almost prophetic foresight, the Anglo-Persian Oil Co. interested the British Government in an oil concession in Persia that, within the next few years, may prove to be, to the Eastern Hemisphere, what the Mid-Continent, California and Mexico have been to the Western Hemisphere.

Economically and industrially England is looking for vast resources of oil, either by ownership or concession—and preferably in the Eastern Hemisphere where most of her Empire lies. "The Statesmanship of Oil" has an entirely different background in London than in Washington—and, quoting the words of Sir John Cadman, of the Anglo-Persian Oil Co.: "But, thanks to the foresight and energy and executive ability of the pioneers of the British oil industry . . . the lost ground has more than been made good."

The Anglo-Persian company's concession in Persia covers 450,000 square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FOR QUALITY

miles—almost as large as Kansas, Oklahoma, Texas, Arkansas and Louisiana combined—far larger than the Mexican fields—as large as all of Colombia in South America—and larger than all of Venezuela.

At Abadan, on an island, at the head of the Persian Gulf, the Anglo-Persian company has a strictly modern, complete refinery—said to be of 70,000 bbls. daily capacity. Persia produced a daily average of 88,400 bbls. of crude in 1924. After taking care of the Abadan refinery one tanker a day is going through the Suez Canal, either carrying crude to the new 30,000-bbl. refinery at Llandarcy in Wales, or returning to Persia for a new cargo.

And enough tankers go from Persia to Australia to supply the crude requirements of the 5,000-bbl. refinery at Sydney.

Refining In Indies

Refining in India is naturally exclusively British controlled—and their refining capacity is about equal to their daily production which averaged 22,200 bbls. in 1924.

In the East Indies, production, refining and marketing are divided between the English, Dutch and Standard Oil (New Jersey). Crude production in 1924 averaged 67,300 bbls. a day, while a concededly incomplete list of the refineries shows over 40,000 bbls. of daily refining capacity. It is probable that the East Indies, eastern and southern Asia and the islands of the Pacific use all of the crude and all of the refined products produced in that area—and, in addition, use large quantities of American products.

Japan is a much larger consumer of petroleum products than it is either a producer or refiner—and, with an ambitious program, its markets will probably continue to be supplied, and in increasing proportions, by imports—unless Japan, like England, can acquire prolific concessions in other countries.

Except those parts of Africa that are under the control of European countries, the greater part of the remainder of the continent knows little of crude oil, refined products, motor vehicles, highways—and what they are symbolic of. These enriching things have not yet entered the lives of millions in Africa—but they will, slowly, and whether or not crude oil in great quantities is found in the Dark continent, or, if found, is refined there, are matters of future history.

But this fact remains—that Africa, with 3,130 bbls. a day of crude production and a refining capacity that may be either slightly less or more than that amount, merely indicates the marketing possibilities that are sure to slowly develop in this continent, entirely aside from the question of production or refining.

General Conclusions

In a brief survey of world refining a few general conclusions seem inescapeable. There are today six great crude oil producing areas—United States, Mexico, Russia, North Coast of South America, Southwest Asia (Persia) and Southeast Asia (East Indies). The present undeveloped stage of the resources and industries of some of these producing areas is such that for probably a good many years to come their surplus crude will be tankered to those nations where resource and industrial development have made the greatest advancement. And in these advanced nations will naturally be found the most efficient refinery equipment and practice—and greatest quantitative development.

Obviously, then, the surplus crude from Mexico has gone, and will continue to go, and the South American surplus will go, principally, to the United States and Europe. The Asiatic surplus will go, principally, to England. Because of the breadth and richness of their industrial and commercial backgrounds, oil is today more vital to the United States and to England than to any other countries—and they have made the most, industrially and commercially, out of oil. Of these two countries, the United States has the oil, within its own borders, and refines it. England has almost no oil within her borders, but, through concessions in foreign countries, produces and refines a rapidly increasing proportion of the world's total.

The derrick and the refinery are symbolic of a new phase in our industrial life—and what they stand for is going to be an increasingly powerful factor in international relationships, which, in the last analysis, are largely industrial and commercial relationships.

EASTERN FIELDS

(Continued from Page 48)

the Buell Run sand. It is a very light pumper. In the Fisher Pool, Lot 80, Athens Township, Athens County, Gross & Frebault's No. 7 on the N. W. Radford farm is a gasser in the Berea grit good for 1,000,000 feet of gas.

In the northeast quarter of Section 4, Green Township, Hocking County, the Red Top Oil & Gas Co.'s No. 8, on the Chure heirs' farm, is a very light gasser in the Berea grit. The Margget Oil Co.'s second test on the C. H. Davidson farm, in the northeast quarter of Section 21, Jackson Township, Knox County, is good for 10 bbls. a day in the Berea grit. On Tract 14, Lot 3, Chatham Township, Medina County, E. R. Edson Son & Co. have a 5-bbl. pumper at No. 17 on the George W. Packard farm.

In Lot 28, Newton Township, Licking County, Patton Brothers & Co. have started to drill a test on the Amanda Stewart farm. In Lot 24, same township, E. J. Edmonds & Co. have started to drill another test on the Ellen E. Forry farm. The second test on the Hardesty heirs' farm in Colerain Township, Belmont County, drilled by the Carnegie Oil & Gas Co. and others, is a 10-bbl. pumper in the Berea grit. In Cross Creek Township, Jefferson County, the Georges Run Gas Co. has a gasser in the Big Injun sand at a second test on the D. Crouch farm. In the same township, Robertson & Co. have a duster in the same formation at a test on the Samuel McCullough farm.

Week-End Completions

At the close of the week's development work the southeastern Ohio fields had quite a number of completions and amongst them one good and a fair producer. The better of the two larger producers is the Edward H. Everett Co.'s No. 3 on the Millard F. Romine farm, in Section 14, Hanover Township, Licking County. The well produced 170 bbls. the first 24 hours. In the northwest quarter of Section 33, Falls Gore Township, the Old Town Oil & Gas Co. has a duster in the Berea grit at a test on the Henry Linton farm.

Shallow Sand Territory

Light pumpers and dusters comprised the completions in the shallow sand territory. In the southeast quarter of Section 25, Center Township, Noble County, J. H. Yerain and others have completed a test on the E. C. Brown farm and dry in the Buell Run sand. In the southwest quarter of Section 3, Green Township, Monroe County, N. T. Estadt & Co.'s second test on the David Crawford farm is good for 4 bbls. a day in the Keener sand. The same company's No. 3 on the same farm is good for 5 bbls. in the same formation. Both wells are located in advance of previous production.

Washington County

Late completions in Washington County are little better than dry holes. In Independence Township, Buchannan & Wise have a small pumper in the Mitchell sand at No. 23 on the Harland-Mendenhall farm. On Newport Township, G. W. Kesselring has the same kind of a pumper in the Keener sand at No. 18 on the A. B. Little farm. On Paw-Paw Creek, Section 150, Salem Township, J. C. Carner and others have a duster at a test on the William Hull farm. Nothing was found in or above the Macksburg 800-foot sand. In Section 8, Liberty Township, C. E. Smith & Co. have a very light pumper in the Big lime at a test on the C. E. Smith farm.

West Virginia

The best producer in the West Virginia fields came in at the close of the week. It is Raew Brothers' test on the John Adams farm, in Grant district, Ritchie County, and is a natural producer that placed 75 bbls. to its credit the first 24 hours after drilled into the Big Injun sand. In the new Big Injun sand development in Henry district, Clay County, the South Penn Oil Co. has completed No. 2 on the O. D. Stockley farm and good for 25 bbls. a day.

Wood County

In Walker district, Wood County, the South Penn Oil Co.'s No. 11 on the J. D. Walker farm is a 6-bbl. pumper in the Berea grit. In the same district, the Woodhard Oil Co. is drilling No. 9 on the Elgie Grant farm. In the same district, Hines, Peevy & Co. has started to drill another test on the Hebrack & Rapp heirs' farm.

On the Cairo tract, Burning Springs district, Wirt County, the Cairo Oil Co., on the left fork of Straight Creek, completed a second test and has a good gasser. In Clay district, Monongalia County, the South Penn Oil Co. has drilled No. 3 on the Mahlon Tennant farm from the Big Injun to the fifth sand. It is a good gasser in the lower formation.

Kanawha County Gassers

On Poca Fork, Elk district, Kanawha County, the South Penn Oil Co. has completed in the Big Injun sand a test on the V. M. & J. A. Dodd farm. It is a gasser good for 340,000 feet. On the same stream and district, the Columbia Carbon Co. has a fair gasser in the same formation at a second test on the Catherine Jarrett farm. This location is 2,000 feet north of the test on the Virginia Dodd farm.

On Plum run, Murphy district, Ritchie County, F. G. Davis & Co. is drilling a test on the A. W. Flesher farm. In the same district, the Lucky Day Oil & Gas Co. has spudded in at a test on the J. A. Maxwell farm. On Grass run, same district, A. R. Kelly & Co. has started to drill a test on the G. W. Mosser farm.

In Glenville district, Gilmer County, J. H. Taylor & Co.'s test on the T. M. Lowther farm is a gasser in the Big Injun sand. In Center district, the Mill Fork Oil & Gas Co. has a duster in the same formation at a test on the C. N. Snodgrass farm.

In Union district, Ritchie County, the Carnegie Natural Gas Co. has a gasser in the Big Injun sand at a test on the Smith heirs' farm. In the same district, the Hope Natural Gas Co.'s test on the R. C. Bee farm is a gasser in the same formation.

Pumper In Wetzel County

In Proctor district, Wetzel County, located a mile in advance of production, Shrader & Co. have drilled a test on the J. A. Williams heirs' farm into the Gordon sand showing for a 5 or 6-bbl. pumper. In New Milton district, Doddridge County, G. B. Travis has completed in the Gordan sand at a total depth of 2,830 feet, a test on the Henry Snyder farm. It is a duster.

In Jefferson district, Pleasants County, A. F. Marple & Co. have completed a test on the W. S. Pratt farm and good for 3 bbls. a day in the Cow Run sand. In Burning Springs district, Wirt County, Roberts Brothers have completed in the Maxon sand No. 144 on the Rathbone oil tract. It is a duster.

In Union district, Ritchie County, the Stephens Drilling Co.'s test on the M. P. Simmons farm is a gasser in the Big Injun sand. In Murphy district, same county, S. A. Powell & Co.'s second test on the Kennedy heirs' farm is a gasser in the same formation.

Gassers In Lincoln County

In Carroll district, Lincoln County, the Maul Rock Oil & Gas Co.'s test on the Martha Hicks farm is a gasser in the Berea grit. In Sheridan district, the Columbia Gas & Electric Co. has a gasser in the same formation on the Roe Nida farm. In Jefferson district, the Bear Branch Gas Co. completed a Berea grit gasser on the Mollie Abbott farm.

In Curry district, Putnam County, the Grant Gas Co. has a gasser in the Big Injun sand at a test on the William Carpenter farm. The Tampico Oil & Gas Co. is due in the sand at a test on the George C. Weimer farm in Jefferson district, Kanawha County.

In West Union district, Doddridge County, West Virginia, the Clifton Oil Co. completed in the Big Injun sand No. 11 on the Flora Freeman farm and showing for a 25-bbl. producer in this formation. In Union district, Clay County, located somewhat remote from the Big Injun Pool on Grannys Creek, the United Fuel Gas Co. has completed a test on the B. V. Samples farm. It is located 2,000 feet southeast of the Empire Petroleum Co.'s test on the L. V. Koonts farm and is a gasser in the Big Injun sand, good for 250,000 feet.

On Green Creek, Harper district, Roane County, the Green Creek Oil & Gas Co. has completed in the Big lime formation a test on the Willis Fields farm. It is a gasser good for 500,000 feet. In Skin Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co.'s test on the W. G. Bennett farm is a gasser in the Gantz sand.

In West Union district, Doddridge County, L. L. Shinn's test on the W. K. Knight farm is a 10-bbl. pumper in the Big Injun sand. The West Virginia Light & Heat Co.'s test on the John F. Brock farm, in Grant district, Ritchie County, is dry in the Berea grit. In Union district, D. M. Heckert & Co.'s test on the Phoebe Williams farm is a gasser in the Big Injun sand. In Union district, Tyler County, Dr. George T. Gale's No. 8 on the Sarah D. Thistle farm is dry in the Big Injun sand and only a little oil in the Maxon sand.

Harrison County

In Ten-Mile district, Harrison County, Mrs. G. N. Allender's No. 4 on the W. S. James farm is a light pumper in the Gordon sand. In the same district, the Clarksburg Light & Heat Co. has a gasser in the 30-foot sand at a second test on the Thomas S. Morris farm. In Simpson district, the Vesper Oil Co.'s second test on the Cletus Stout farm is a gasser in the fifth sand. In Battelle district, Monongalia County, the Carnegie Natural Gas Co. has a fair gasser in the Bayard sand at a test on the Phillip Shuman farm.

Doddridge County

In Central district, Doddridge County, the Hope Construction & Refining Co. has a 15-bbl. pumper in the Big Injun sand at No. 7 on the H. B. Williams farm. In the same district, the Vincent Oil Co.'s test on the F. P. Dotson farm is dry in the same formation. The location is 600 feet north of the test on the Nutter farm. In Union district, Tyler County, D. E. Sanders has the rig completed for a test on the N. A. Hays 30 acres.

On the waters of Little Buffalo Creek, Carroll district, Lincoln County, 2 miles west of the Columbia Gas & Electric Co.'s test on the J. F. Glass farm, the same company has completed and shot in the Berea grit a test on the J. W. Reynolds farm. It is a gasser good for 300,000 feet. On Mud River, same district and county, 4,000 feet south of the Glass farm, the Transylvania Petroleum Co. has the rig completed and started to drill a test on the Charles Gillenwater farm. In the same river, Grant district, Cabell County, 4 miles south of Beckett Pump Station, Lewis Sweetland and others have started to drill a test on the Frank Fowlba farm.

Good Gasser In Harrison County

On Coburn Fork, Ten-Mile district, Harrison County, the Southern Oil Co. has completed in the fifth sand its second test on the Serpta Nutter farm. It is a good gasser in the formation named. In the same district, Bradley & Alnder are due in the sand at No. 4 on the W. S. James farm. The Patterson Fork Oil Co. has abandoned at 3,138 feet No. 8 on the R. T. Lowndes farm. F. G. Bish has a light gasser in the fifth sand at a test on the Pepper farm.

Starting Test Wells

In Sheridan district, Calhoun County, L. B. Carroll has the rig completed for a test on the Hagan-Barr farm. In Harper district, Roane County, the Green Creek Oil & Gas Co. is due in the sand at a test on the William M. Fields farm.

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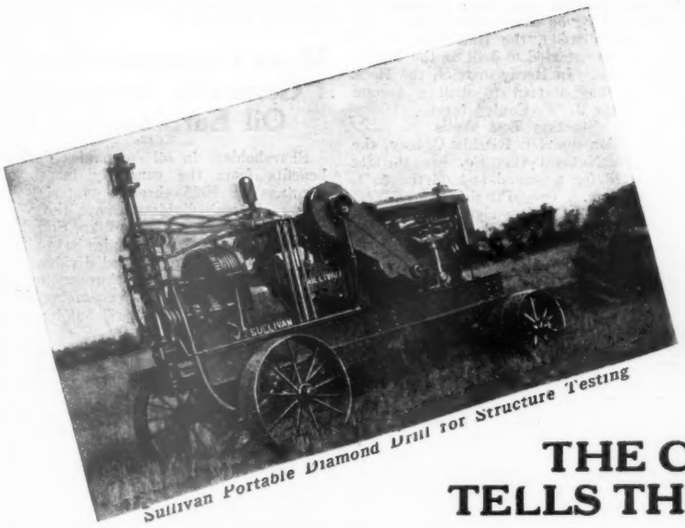

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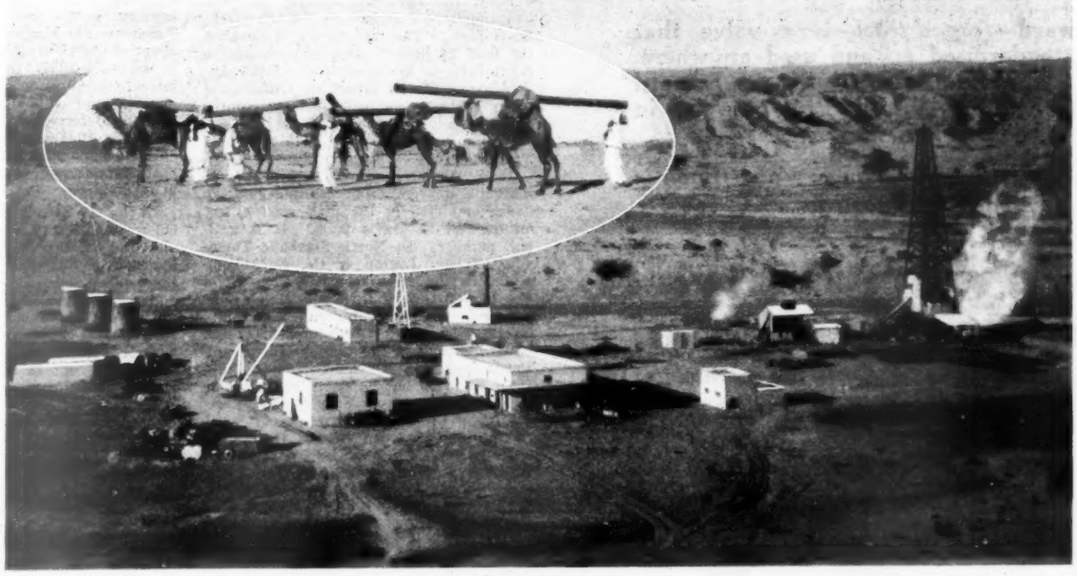

Sullivan "FK" Diamond Drill in the Punjab, India, which w ent to a depth of 6007 feet this year in the search for oil. The inset shows part of a camel trai n transporting casing to the drill site.

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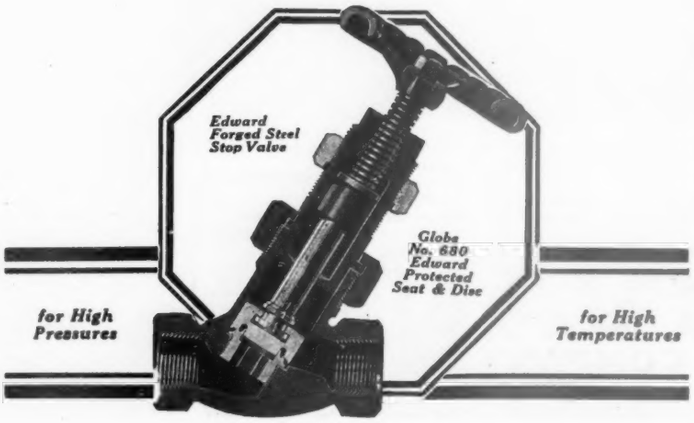

In Smithfield district, Godfrey L. Cabot has a rig up on the Nettie B. Kincaid farm. In Geary district, the United Fuel Gas Co. is rigging up on the Wesley K. Ellis and M. M. Harper farms. In Walton district, the same company is building a rig on the H. Hivey farm. In the same district, the Buff Lick Oil & Gas Co. has started to drill on the Taylor heirs' farm. In Reedy district, the Heck Oil Co. has started to drill a second test on the J. W. Conley farm.

Starting Test Wells

In Union district, Ritchie County, the Carnegie Natural Gas Co. has the rig completed for a second test on the A. I. Kelly farm. The Pittsburgh & West Virginia Gas Co. has rigs completed on the W. B. Zinn and R. A. Thomas farms. Both located in Union district. In Sheridan district, Calhoun County, the Great Elk Oil Co. is fishing at 1,670 feet at an old well drilling down on the W. E. Watson farm. In Skin Creek district, Lewis County, L. H. Williams & Co. have a location on the Martha J. Whaley farm.

More Tests In Lincoln County

The W. C. Kingrey Gas Co. has started to drill a second test on the Alex Wheeler farm, in Carroll district, Lincoln County. In the same district, the Columbia Gas & Electric Co. is drilling on the E. E. Sites farm. In Jefferson district, the Cambridge Gas Co. has started another test on the Henry Linville farm. In Union district, the Union Oil & Gas Co. has moved a drilling machine to a location on the G. F. Porter farm.

New Work In Roane and Calhoun

In Geary district, Roane County, the Cromwell Oil & Gas Co. is rigging up on the Michael Harrold farm. The Hope Natural Gas Co. has started to drill on the Dosia Betts farm, in Lee district, Calhoun County. In Center district, the same company is building a rig on the A. G. Matthews farm. In Sherman district, the White Pine Oil & Gas Co. has made a location on the W. S. Barnes farm.

Good Producer In Southwest

For the first time in a number of months, the southwest Pennsylvania fields have presented better than a light pumper. In Morris Township, Greene County, the Carnegie Natural Gas Co. has completed a second test on the W. L. Scott farm. The well produced 80 bbls. the first 24 hours. The location of the Scott farm is in the vicinity of the Anderson and Rutan farms, on which good producers were completed several months ago. There are other wells in that locality long past due, but have been held up on account of litigation.

In South Strabane Township, Washington County, William Dallinger & Co. have completed in the fifth sand a test on the W. E. Davis farm. It is a 3-bbl. pumper. In North Strabane Township, Tague, Lutton & Co. have completed in the same formation No. 6 on the R. G. Lutton farm. It is a light pumper. In Washington Township, Greene County, the Philadelphia Oil Co. started swabbing the test on the Frank Pettit farm and increased its production from 45 to 60 bbls. a day. In the same locality, the Waynesburg Gas Co. is drilling a test on the J. Huffman farm.

Drilling Tests In Greene County

In Richhill Township, J. I. & G. W. Bondy are due in the Gordon sand at a test on the W. S. Hughes farm. In Morris Township, the Consumers Gas Co. has started to drill on the James Rutan farm. In the same township, C. H. O'Neal and others have started to drill on the Benjamin Polen farm. In Gilmore Township, the People's Natural Gas Co. has rig material at a second location on the May McGary farm. In Springhill Township, the same company is due in the Gordon sand on the Ritchie Cooper farm. In Aleppo Township, the Black Creek Oil & Gas Co. has moved tools to a location on the Bert Lohr farm. In the same township, Guy Patterson has made a location on the W. P. Grim farm. In Wayne Township, H. E. Milliken & Co. are due in the sand on the H. W. Cole farm.

In Wayne Township, Greene County, Roy Clovis and others have completed at a total depth of 3,402 feet a test on the Felix Bell farm. It is a gasser in the Bayard sand, good for 800,000 feet. In the same township, the Swastica Oil & Gas Co. drilled a test on the Strosnider heirs' farm into the Big Injun sand. It is a gasser in this formation, good for 500,000 feet.

Many Companies Show Generally Increased Oil Earnings in 1925

Shareholders in oil companies derived benefits from the generally larger oil earnings in 1925 through material increases in cash dividends, says the Wall Street Journal. Twenty-four Standard Oil and independent companies have either raised payments or resumed dividends at rates which brought disbursements to shareholders this year aggregating $30,023,000 more than was paid out by these companies in 1924.

In addition, there have been several substantial stock dividends, notably 33 1-3 per cent by both Imperial Oil, Ltd., and Union Tank Car Co., and 3 per cent by Sun Oil Co. Standard Oil of New York has announced its intention of declaring 25 per cent in stock after absorption of Magnolia Petroleum has been completed.

More than half the increased dividend payments was made by the independent group of oil companies. Their increased disbursements for the year totaled close to $17,000,000, while in the Standard Oil group, companies paying larger dividends this year than last increased disbursements by about $13,500,000.

In the Standard group there were several dividends passed, principally by Prairie Oil and some pipe line companies so that the aggregate Standard Oil dividends in 1925 made a net gain of but $3,117,000 over 1924.

The largest individual increase was that occasioned by Pan American Petroleum raising its rate from $4 to $6 annual basis; on its 2,747,342 shares this increase amounted to $5,494,684. Marland Oil was second in size, resuming dividends in the second quarter with a 75-cent payment, followed by a similar declaration the third quarter and a $1 payment in the final quarter. By these disbursements Marland pays stockholders about $4,460,000 this year against no payments in 1924. Shell Union Oil raised its rate from $1 to $1.40 basis the first quarter and this increase represented $4,000,000 larger dividends to the holders of its 10,000,000 common shares. Pacific Oil's increase from $2 to $3 annual basis represented payment of $3,500,000 more dividends than in 1924.

In the old Standard Oil group Vacuum Oil was the leader. Its payments in regular and extra dividends amounted to an increase of $3,095,000 on the 2,476,798 shares over disbursements last year. Magnolia Petroleum, which has been stock controlled by Standard Oil of New York and is now in process of being entirely absorbed, paid $2.75 a share in cash and 2 per cent in stock. Value of the latter distribution was about $3.60 a share and on this basis Magnolia's payments were $4,235,806 larger than in 1924.

Ohio Oil was another important Standard unit to raise disbursements, paying $1 a share more, or $2,400,000. Imperial Oil, Ltd., split its stock four for one and paying $1 a share, equal to $4 on the old stock instead of $3 previously, paid out $1,622,000 more than in 1924. The smallest increase was by Borne & Scrymser, amounting to $20,000 represented by $2 increase on 10,000 shares.

Others of the independent group paying more dividends were Associated Oil, the increased disbursements amounting to $840,000; Barnsdall resuming payments with a 50-cent dividend amounting to $442,835; California Petroleum's increased payments amounted to about $200,000; Phillips Petroleum's increased rate applied in the last quarter and amounted to $601,000; Salt Creek Producers paid $598,000 more than 1924 and Skelly Oil's dividend resumption, with one payment of 50 cents a share in the last quarter, amounted to $431,000.

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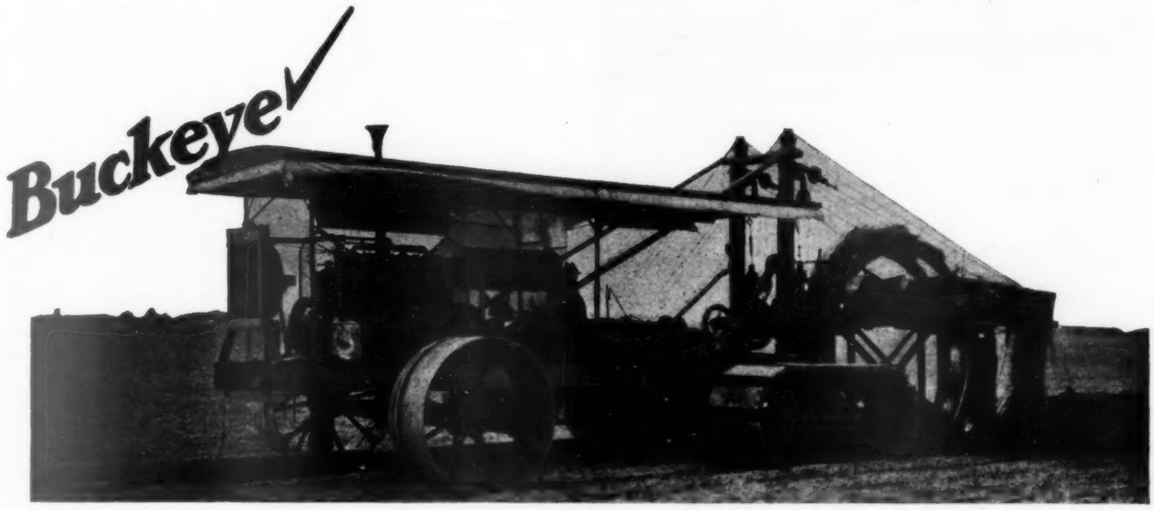

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On a 30-mile pipe line, with trench 27 inches deep and 24 inches wide, W. E. Kimrey Construction Co. averaged 3,600 to 4,000 feet each 9½-hour day.

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PROTEST MEXICAN PETROLEUM BILL

(Continued from Page 126)

waters and their accretions (or appurtenances,—accesiones), or concessions for the exploitation of mines, water or mineral fuels, within the territory of the Republic, he must satisfy the requirement set out in Fraction 1 of Article 27 of the Constitution, viz:—To agree before the Department of Foreign Relations to consider himself a national with respect to that part of the property which pertains to him in the company, and therefore not to invoke the protection of his Government so far as such property is concerned, under penalty, in case of failure to observe the agreement, of forfeiting to the Nation such properties as he may have acquired or may acquire as an associate in the company in question.

Article 3. In the case of Mexican companies engaged in agriculture, the permission to which the foregoing article refers (Note: Although no "permission" is expressly referred to in the preceding article, this undoubtedly means the permission which the Constitution contemplates shall be granted to the foreigner after his having made the required agreement before the Department of Foreign Relations) may not be granted if, as a result of the acquisition to which said permission refers, there might be in the hands of foreigners 50 per cent or more of the total interest of the company.

Article 4. Companies which possess properties intended for agricultural purposes, or shares in companies organized for these purposes, and which do not bring themselves into conformity with the foregoing article, shall be obliged to dispose of said properties within a period of 10 years computed from the date of the promulgation of this law.

Article 5. Rights comprehended within the present law, but not comprehended within the foregoing article thereof and lawfully acquired by foreigners prior to the taking effect of the same, may be retained by their present owners until death.

Rights Limited

Article 6. If any foreign individual should involuntarily through inheritance acquire any rights the acquisition of which is prohibited to foreigners by this law, the Department of Foreign Relations will give permission to have the partition made and the respective deed recorded. In case there should have to be adjudicated to any foreign individual, by virtue of a preexisting right acquired in good faith, any right among those which are prohibited to him by this law, the Department of Foreign Relations may give permission for such adjudication. In both cases the permission will be granted with the condition that at one and the same time the rights in question be transferred to some person who is qualified within the provisions of this law.

Article 7. Foreigners who may have any right among those which are the subject-matter of this law, acquired prior to its taking effect, must file a statement (manifestation- with the Department of Foreign Relations within the year following the date of the promulgation of the present law; with the understanding that if this is not done, the acquisition shall be considered as having been made subsequent to the promulgation of this law.

Article 8. Any acts done and any contracts made contrary to the provisions contained in Articles 1 and 2, shall be absolutely void. Failure to comply with Article 4 shall furnish occasion for sale at auction of the properties referred to therein.

Article 9. This law does not repeal any restrictions imposed by special laws upon foreign individuals with reference to the acquisition of rights within the territory of the Republic.

Article 10. The Executive shall regulate the provisions of this law.

Article 11. Within the meaning of this law, but without prejudice to what any special law may provide, leases for a period of more than 10 years of real estate of such area as may be strictly necessary for the establishments or facilities devoted to industrial, mining, petroleum or other non-agricultural objects of the company shall not be considered as alienation of properties.

Transitory

This present law shall take effect from the date of its promulgation.

RECOVERY OF THE OIL INDUSTRY IN RUSSIA

(Continued from Page 126)

Soviet oils have been finding a ready market in Europe and in the Near East. During the past year they have also made progress in the Scandinavian countries. The Near Eastern market absorbs over 70 per cent of the exports of kerosene; France, Germany and Italy in the order named consume over 90 per cent of the gasoline; Germany takes 60 per cent of the lubricating oils, while Italy is the chief purchaser of fuel oils.

The principal discoveries of new pools during the year were on the Apsheron Peninsula area, in the Baku fields, where the Bureau of Geological Surveys, maintained by the Azerbaijan trust, has been carrying out extensive prospecting operations. In the Surakhany section of this region a rich oil layer has been discovered in the so-called fifth stratum. In the Kala section a large pool of light benzine-base petroleum has been found. In some localities here the drillings have revealed oil containing 50 per cent of crude gasoline, whereas the usual Baku petroleum contains not over 4 per cent.

The presence of oil-bearing territory on the Kamchatka Peninsula in Siberia has also been confirmed by an expedition of the Bureau of Mines. Surveying and prospecting in the district of the Bogachevka River, where oil was found, will be undertaken to ascertain the extent of the new field.

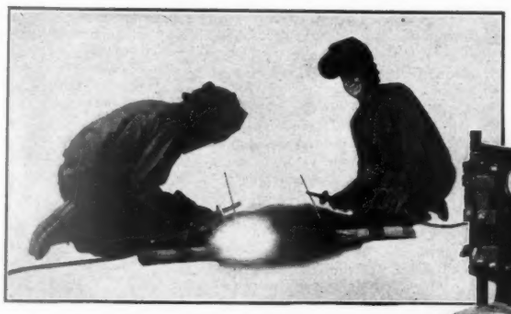
No adequate survey of the total oil reserves of the Soviet Union has ever been made. Geologists estimate the reserves in the three principal areas, Baku, Grozny and Emba, at over a billion tons. Broad oil bearing territories in several sections, such as the Kabristan Meadows on the borders of Azerbaijan, and in the northern Caucasus, have not even been surveyed yet.

NOTABLE NAMES ON ANCIENT DOCUMENT

(Continued from Page 114)

The derrick cost $300, boiler and engine $600, 300 feet of casing, at 40 cents a foot, cast $120; drilling, 45 cents per foot, and other expenses came to about $50. Some of the little refineries built in those days were as cheap and crude as the oil that was run through them. Floating a $5,000 company was some flotation in the seventies.

On the agreement are the signatures of John Adams Vera, Henry Casper Wachter, John V. Ritts, Charles Welling Pratt, Frank Springman, Charles Henry Payne, James, Kifer, William Stewart Taylor, Alfred Noyes Strong, Nicholas Quirk, Josiah Fillman, Andrew Jackson Shrum, Orlando Henry Carpenter, George Taylor, Charles Weible, John Thomas Sheppard, David Almas, Michael Mackin, John Miles Fink, Joseph Kirschner, William O. Wing, William H. McLaughlin, John Adam Maxler, Marion Henshaw, James Buchanan McElwaine, Charles Thomas Watt, Thomas Edward Dutton, Samuel Gamble Bayne, Isaac Moore Taylor, John T. Farner, David F. Jones, James Beveridge, Robert Columbus Coulter, Simon Hugus, Asaher Clark Smyth, Thomas Henry Lloyd, John J. Ashbaugh, Richard Henry Lee Neely, Phillip Foust, Jr., David Phillips, William Krotzer Swartz, Rudolph Messer, Robert C. Scofield, Harry Derousse, Torrance F. Young, Elliott M. Bonnell, Paul Krotzer, Archibald T. Mason, Alexander Brown Barr, Leonard Dehner, Jacob Hayward, Charles Ritts, Absalom Wesner, Oliver C. Neely, John O. French, Israel Painter, Jr., Prosper E. Wellman, Victor Gretter, Patrick H. Jones, Josiah M. Albert, George W. Shoemaker, Robert H. Johnson, Crist H. Ritts, Reuben M. Fowles, Morris Shear, Joseph Lorenz, Christopher Reichart, Keller R.



"Great Stuff, Jim—
This Wilson Wire—
It's Always the Same"

The above is a Wilson Single-Operator Gasoline-Engine-Driven Electric Welding Machine, Capacity, 75 to 200 amperes. Other models include motor-driven and belt-driven machines with capacities up to 250 amperes; also two-operator units.

It's a Better Machine

The right grade of wire—the right analysis—for every welding job, and then absolute uniformity throughout the selected grade—that constitutes the *best* welding wire. You can best insure your welding jobs being done right the *first* time—you can best insure economy—by always using Wilson "Colortipt" Welding Wire. Ask for samples, indicating the kind of metal you desire to weld.

The *simplicity* of design and *close control* of the welding current make the *new* Wilson Type S a distinctly *better welding machine.* Some of its features include the generator that is self-excited; the regulation of current by simply turning the knob of field rheostat; the arc that is easy to start and easy to maintain; the fast work with electrodes up to $\frac{3}{16}$" in diameter. These and many other features give to Wilson the distinction of leading in the perfection of electric arc welding. And still the price has been lowered.

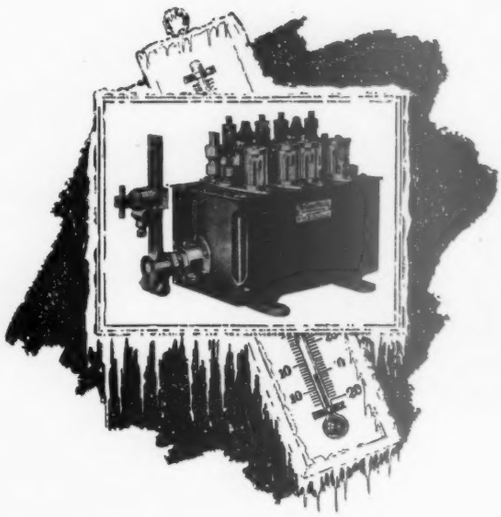
Write us today for full information

WILSON WELDER & METALS CO. INC., WILSON BLDG., HOBOKEN, NEW JERSEY

WILSON

WELDING MACHINES AND WELDING WIRE

Positive Lubrication in Freezing Weather



WHEN the thermometer drops to zero and the oil in the pipe lines congeals, it is human nature to forget the usual oiling or to neglect to give it the added attention required at this time. The result is that scored cylinders and frozen bearings prevail, tying up production.

Cold weather does not affect the operation of McCord Lubricators—they will pump any kind of oil against any pressure up to 2000 pounds, requiring no attention other than the occasional filling of the reservoir.

McCord Lubricators on your pumping and drilling units are the best assurance for continuous production during this Fall and Winter season, that can be purchased.

Your nearest National Supply Company branch carries McCord Lubricators

McCord
force feed
Lubricators
Standard of the Oil fields

McCord Radiator & Mfg. Co., Detroit
LUBRICATOR DIVISION

S Smith, Charles Sipler, Morris L. Painter, Francis Marion Neely, Calvin A. Brainard, Jonathan D. Murphy, James Clarion Davis, Marcus LaFayette Lockwood, James H. Hughes, David Silberberg, William M. Smith.

Some Well-Known Figures

Some of the names above recorded were of men who cut a wide swath in the oil business in their time. Marcus L. Lockwood was a two-fisted fighter who, in his autobiography published in the Oil City Derrick's "Handbook of Petroleum," boasted that he was "elected to the Producers Committee in 1872 and have been identified with every movement of the oil producers to resist the encroachment of the Standard monopoly ever since." J. Adams Vera died in Texas a few years ago, an octogenarian—oil producer and publicist; Samuel Nelson Bayne was then an agent for Farrar-Trefts engines and boilers, but later a member of the firm of Bayne, Wilson & Pratt, which grew into the National Supply Co. Mr. Bayne became president of the First National Bank of Bradford and then president of the Seaboard National Bank of New York, which high office he held up to the time of his death about a year ago. Charles W. Pratt, the secretary of the association, was then associated with Mr. Bayne and later became a partner in the firm of Bayne, Wilson & Pratt. Victor Gretter was an inventive genius, who specialized in devices to improve methods of producing oil and gas and in extinguishing gas fires at wells. James Buchanan McElwaine in later years was a prominent distributor of oil well supplies in the Pennsylvania and later in the Central West fields. David Phillips became known as the "best jar maker in America" and made a comfortable fortune in turning out oil well tools, with himself at the forge and hammer while a white-collar man took care of the details of the "front office."

Mr. Shear was asked to tell the story of the St. Petersburg Petroleum Producers Association.

Bradford Made Them Forget

"Just after I signed the agreement to take stock in the company the Bradford Field attracted me," said Mr. Shear. "I heard all sorts of stories about how busy it was and how much busier it was going to be and I decided to go up there and look it over. When I arrived in Bradford I sensed at once that it was going to be a great development, the biggest thing we had ever known in the oil business, so after a short stay I went back to St. Petersburg to close up my affairs there and everyone want to know about Bradford. When I settled up my business in Clarion County and moved to Bradford the bulk of the stockholders of the St. Petersburg Petroleum Producers Association were on the same train, if they had not beaten me there, and we forgot all about the association.

"The pipe lines could not take care of the oil in Bradford and storage tanks and field tanks were running over with crude. There was only about 175,000 bbls. of storage in the Bradford district and it was full, and the field was then producing about 9,000 bbls. a day from about 1,300 wells. At the same time the whole State of Pennsylvania was producing about 38,000 bbls. and the whole country not much more than that."

Few are left of the men who signed the stock subscription list in St. Petersburg, but many of them left a legacy of good deeds and a record of business integrity that kept their memories green. One of the few survivors, Morris Shear, who had long forgotten the St. Petersburg Petroleum Producers Association until the document was restored to his hands, went over the list of names of old friends and fellow producers with smiling countenance and while he could not recall some of them, others called forth little stories of experiences in which they figured in the early days that marked the kind of men then known in oildom.

How Bayne Met Pratt

It was in the town of St. Petersburg that S. G. Bayne and Charles W. Pratt met for the first time. There is a legend that in the spring of 1874 the mud in St. Petersburg's main street was eight feet deep. There was only one cross walk in front of the St. Petersburg Hotel and it was a narrow one. One day, so the story goes, Bayne and Pratt met near the middle of the crossing. Pratt said: "Stranger, I was here first. You will have to turn back or jump off." Bayne replied: "I'll flip a penny to see who makes the jump." Pratt agreed. Bayne flipped the coin and Pratt lost, and without a moment's hesitation jumped overboard and went out of sight. Badly scared, Bayne hurried back to the sidewalk and into a hose house where he found a long pole with a hook on one end. Hurrying back to the crossing he fished around until the hook found Pratt's clothing and he was drawn up to where Bayne could seize his coat collar and haul him up on the walk. "You're the gamest man I ever met," said Bayne, admiringly, and he peeled a $100 bill from a roll and handed it to the stranger. Introductions followed and there started a friendship that developed into a business partnership along with Henry M. Wilson, Bayne, Wilson & Pratt, which lasted until the firm started the National Supply Co.

AMERICANS ARE NOT OUT OF TURKISH CO.

(Continued from Page 122)

without foundation. Neither was it true, said Mr. Teagle, that American interests had withdrawn from the Turkish Petroleum Co.

According to London advices the Turkish Petroleum Co. explains the apparent contradiction between Sir Charles Greenway's omission of American participation in the company and Mr. Teagle's denial of the withdrawal of the group by saying that both are correct and that negotiations are still continuing. This implies that the present situation is somewhat obscure pending negotiations that are now going on toward straightening out some of the interests involved. The principal difficulty lies in reaching an arrangement with C. S. Gulbenkian.

It is stated that prior to taking 25 per cent of the shares of Turkish Petroleum Co., the American group and others were to reach an agreement with Mr. Gulbenkian, his claims dating from the formation of the company. He wanted cash for his share. It is stated the Anglo-Persian Oil Co. and Dutch-Shell agreed to give him 2½ per cent participation each in lieu of cash, and the American group upon taking half of Anglo-Persian's shares was expected to pay cash or give Gulbenkian part of the 25 per cent of the total shares reserved for the American group.

Demands Called Unreasonable

It is learned authoritatively that the American group regards Gulbenkian's demands as out of all reason. London reports assert that the American group refused to participate in buying him out for cash and entirely opposed his participation in the company, saying it would withdraw if he remained. It is further stated that the American group proposed to reorganize the Turkish Petroleum Co., each company participating to take part of the oil produced in lieu of dividends. Other participants were inclined to favor these recommendations, but Mr. Gulbenkian wanted cash and has some support from the Royal Dutch and French interests. He now offers to submit the differences to arbitration.

The American Interests

The American group interested in the Turkish Petroleum Co. comprises the Mexican Petroleum Co., Gulf Refining Co., Atlantic Refining Co., Sinclair Consolidated Oil Co., Standard Oil Co. of New York and Standard Oil Co. (New Jersey). A significant feature of the agreement entered into between the Turkish Petroleum Co. and the Iraq Government is a subleasing arrangement whereby most of the area contained in the concession is thrown open to corporations and nationals of all countries.

Under the subleasing plan a company or individual producer has the same opportunities to produce oil in Iraq as he would possess in the United States, because once Iraq has been demonstrated

BOVAIRD

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Grip

Tubing Spiders

Bovaird & Seyfang
Boilers and Engines

Hazard Wire Lines

Spang, Chalfant & Co., Inc.
Casing, Tubing and Line Pipe

Standard Stainless Tube Co.
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BOVAIRD SUPPLY COMPANY

Wall Manila Drilling Cables and Bull Ropes

Republic Rubber Co.
Drilling and Pumping Belts

Bovaird *Grip* Casing
Elevators and Spiders

The BOVAIRD SUPPLY CO.

904 Mid-Continent Bldg.
Tulsa, Okla.

GENERAL OIL WELL SUPPLIES

—STOCKS AT—

Bristow, Okla. Tulsa, Okla. Independence, Kansas
Sapulpa, Okla. Glick, Okla. Winfield, Kansas
Sapp, Okla. Okemah, Okla.

It Costs Less to Drill With Star Machines!

In the Kevin Field of Montana, this Fall, a Standard Rig and a Star Drilling Machine finished drilling at the same time. They were on opposite sides of the road. Both were going to a new location 600 feet away.

Counting lumber, labor and hire of trucks, it cost the Standard Rig operators $750 more to move than it did the Star Machine contractors.

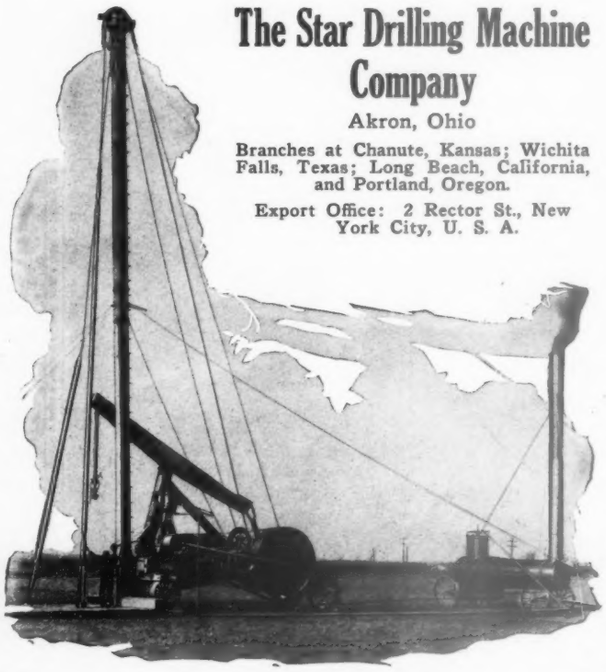
Five days later the Star Machine was down 875 feet in the new well when the Standard Rig started to spud.

The Star Drilling Machine Company

Akron, Ohio

Branches at Chanute, Kansas; Wichita Falls, Texas; Long Beach, California, and Portland, Oregon.

Export Office: 2 Rector St., New York City, U. S. A.



No. 30 Star Steam Machine

to be a potential oil-bearing area such as Oklahoma, Texas or California, then the plan makes possible the transposing of an American set of oil producing conditions similar to Burbank in the Osage.

A period of 3 years is allotted by the Iraq Government for a comprehensive geological survey of the country, starting March 14, 1925. Twelve months after the selection of 24 blocks by the Turkish Petroleum Co., any company or individual may indicate a plot for inclusion at annual auctions, the total plots to be 24 per annum. All plots offered will be advertised in the leading oil papers of the United States, Great Britain, Holland and France. Royalties payable by sublessees are provided. Individual prospectors may indicate blocks and bid for them four years from March 14, 1925. Transportation of the sublessees' crude is provided.

Agreement Highly Important

Failure to reach an agreement in the present matter possibly resulting in the withdrawal and dissolution of the American group would be a great blow not only as regards combined American participation in foreign oil development, but as regards progress made in establishing the open door abroad. The convention signed at Bagdad runs for 75 years from March 14, 1925. The actual lease covers the Kingdom of Iraq, except the Province of Busrah, and any acquisitions resulting from future frontier adjustments. Out of the 90,000 square miles comprising the concession area, the Turkish Petroleum Co. will be permitted to select 192 square miles in 24 rectangular blocks of 8 square miles each.

The conclusion of this concessionary arrangement was hailed as of far-reaching importance. Inclusion of American interests in stock ownership of the Turkish Petroleum Co. followed American Government protests against the San Remo agreement which ignored this country entirely and which precipitated the Mesopotamian oil controversy extending over several years at the end of the World War. It marked a change in the British closed door policy in the Near East.

Regarding the significance of the signing of the Bagdad oil concession, the late A. C. Bedford, chairman of the board of the Standard Oil Co. (New Jersey), said:

"The definite stand taken by the United States Department of State in support of its open door policy, no less than the watchful attitude of the American oil industry to the national and world aspects of future petroleum supply commensurate with the nation's necessities, have, with the effective cooperation of the interested British and French groups, thus been successful in throwing open to all, on broad lines, for the next 75 years, this very extensive potential oil area. Competition for this concession was not lacking, but the widespread character of the undertaking and the desirability in Iraq's interest that the best technical skill and adequate financial resources should be available for its oil development, appears to have weighed with that Government in its decision.

Met Tremendous Obstacles

"A detailed account of the negotiations extending over a number of years which have finally culminated in this agreement would fill a very substantial volume. The many diverse elements entering into the discussions with the different nationalities offered obstacles that at times seemed hopeless.

"For the public at large the significant fact which has drawn so much attention to the agreement is that for the first time in the world's history the nationals of several countries, Great Britain, France, Holland and the United States, have combined their resources of money and skill in a common enterprise looking to the development of an outside country. Similar efforts to organize along this line have been made in past years, but have always proved abortive. The Iraq plan is the common sense method of pioneering in a difficult and distant land. It gives every nation interested an equal opportunity in Iraq, and, in the case of America, to every important oil company desirous of participating in a foreign production enterprise a proportionate share with other participants in this international speculation."

POLAND'S POTENTIAL FIELDS UNEXPLORED

(Continued from Page 114)

Asphalt, 7,700 tons.
Vaseline, 810,000 lbs.
Coke, 8,900 tons.

Polish refineries are producing all oil products with the exception of lubricating oils with cold test below 10 degrees. The latter is manufactured from special crude oil which is scarce in Poland.

Home Consumption

Home consumption in 1924, meaning quantities shipped from the refineries to sales agencies and directly to merchants and consumers, was divided as follows:

Kerosene, 775,000 bbls.
Gas oil, 200,000 bbls.
Gasoline, 170,000 bbls.
Lubricating oil, 300,000 bbls.
Paraffin, 18,000,000 lbs.
Vaseline, 700,000 lbs.
Asphalt, 1,300 tons.

Poland, therefore, consumed of its production in 1924: Fifty-one per cent of kerosene, 22 per cent of gasoline, 24 per cent of gas oil, 36 per cent of lubricating oils, 24 per cent of paraffin, 90 per cent of vaseline, 18 per cent af asphalt.

This is equivalent to a per capita consumption of 1.24 gallons of kerosene, 0.275 gallons of gasoline, 0.325 gallons of gas oil, 0.5 gallons of lubricant. This is less than the prewar consumption, but steady progress is registered in comparison with previous post war years. The value of the entire domestic consumption in 1924 amounted to about $7,000,000. Domestic consumption of oil products may be expected to increase with the development of Polish industry and national wealth. The foundations for these conditions have already been laid by the reorganization of the national financial system.

In each of the three countries, Russia, Austria and Germany, to which parts of Poland belonged before the war, the organization for distributing petroleum products to consumers was different. All of the oil fields and refineries are situated in that part of Poland which was formerly within the Austrian Empire. The distributive organization in the other parts of Poland was adapted to handling oil brought in the case of Russian Poland from Baku by a long rail or water route, and in the case of German Poland imported from Austria, America and Russia. After the unification of Poland the refineries attempted to get in touch with customers throughout Poland without he agency of the established sales organizations. The refineries were unable to form selling organizations all over Poland delivering products direct to the retail trade, but have established their own wholesale agencies which total 650. This large number of wholesale distributors intensified competition and reduced the prices of oil products at times below the costs of production. Several efforts to organize a general sales office for all refineries which would apportion deliveries for the domestic market failed through disagreement over methods of management and quoters.

Central Sales Office

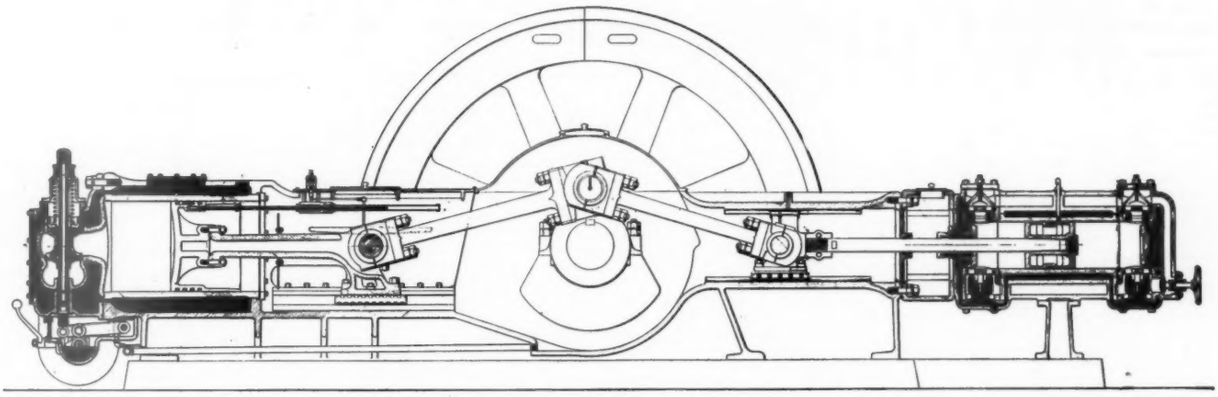
Following a continuous decline of the margin of profits, a new agreement was arrived at in December, 1924, with the approval and cooperation of the Polish Government. All large and medium sized refineries agreed to divide the home market in proportion to the quantity of crude oil worked by them monthly. A controlling office was organized with the understanding that a central sales office for all petroleum products would be established as soon as the details could be worked out.

The following table shows the quantity of oil products exported from Poland in 1924:

Gasoline	665,000 bbls.
Kerosene	780,000 bbls.
Gas oil	600,000 bbls.
Lubricating oils	500,000 bbls.
Paraffin and candles	56,000,000 lbs.
Semi-products	245,000 bbls.

The value of these exports in 1924 was about $16,000,000. In this year

WATTS-MILLER



Section Through Center of Engine

Some essential reasons why the WATTS-MILLER equipment predominates

Because the first cost is reasonable and fair, consistent with correct performance.

Because the design is made on the experience gained in actual 24-hour service requirements.

Because the lubrication has been well worked out, all the moving parts having a continuous flow at all times.

These features lead to reliability and economy of operation.

The Miller Improved Gas Engine Company

Springfield, Ohio

The Oil Insurance Association
Provides for
Real Fire Insurance for the Oil Industry

The Oil Insurance Association is in its seventh year of successful operation, with 100% performance record testifying to the dependability, thrift and speedy and complete satisfaction of its service.

OIL INSURANCE ASSOCIATION MEMBER COMPANIES

Aetna Insurance Co., Hartford, Conn.
American Insurance Co., Newark, N. J.
American Alliance Ins. Co., New York, N. Y.
American Central Ins. Co., St. Louis, Mo.
American Eagle Fire Ins. Co., New York, N. Y.
Alliance Insurance Co., Philadelphia, Pa.
Automobile Ins. Co., Hartford, Conn.
Ben Franklin Underwriters, Pittsburgh, Pa.
Boston Insurance Co., Boston, Mass.
California Ins. Co., San Francisco, Cal.
Camden Fire Ins. Ass'n., Camden, N. J.
Central States Fire Ins. Co., Wichita, Kans.
Citizens Insurance Co., St. Louis, Mo.
Columbia Ins. Co. of Jersey City, N. J.
Commercial Union Assurance, London, Eng.
Commonwealth Ins. Co. of New York, N. Y.
Connecticut Fire Ins. Co., Hartford, Conn.
Continental Insurance Co., New York, N. Y.
Fidelity Phenix Fire Ins. Co., New York, N. Y.
Fire & Marine Underw't's, Hartford, Conn.
Jersey Fire Underwriters, Newark, N. J
Liverpool & London & Globe Ins. Co., Liver-
Firemens Fund Ins. Co., San Francisco, Cal.
Firemens Insurance Co., Newark, N. J.
Firemens Underwriters, Newark, N. J.
Franklin Insurance Co., Philadelphia, Pa.
Glens Falls Insurance Co., Glens Falls, N. Y.
Girard Fire & Marine Ins. Co., Phila., Pa.
Girard Underwriters, Philadelphia, Pa.
Great American Ins. Co., New York, N. Y.
Hanover Fire Ins. Co., New York, N. Y.
Hartford Fire Ins. Co., Hartford, Conn.
Home Fire & Mar. Ins. Co., San Francisco, Cal.
Home Insurance Co., New York, N. Y.
Hudson Insurance Co., New York, N. Y.
Imperial Assurance Co., New York, N. Y.
Insurance Co. of North America, Phila., Pa.
Insurance Co. of State of Pennsylvania, Phila., Pa.
pool, England
Mechanics Insurance Co., Philadelphia, Pa.
Mechanics Underwriters, Philadelphia, Pa.
Mercantile Insurance Co., New York, N. Y.
National Ben Franklin Fire Ins. Co., Pitts-
burgh, Pa.
National Fire Ins. Co., Hartford, Conn.
Natl. Security Fire Ins. Co., Omaha, Neb.
New Hampshire Fire Ins. Co., Manchester, N. H.
New York Underwriters Agency, New York, N. Y.
Niagara Fire Ins. Co., New York, N. Y.
North British & Mercantile Ins. Co., London,
England
Norwich Union Fire Ins. Soc., Norwich, Eng.
Palatine Insurance Co., London, England
Patriotic Insurance Co. of America, New York,
N. Y.
Pennsylvania Fire Ins. Co., Philadelphia, Pa.
Phila. Fire & Marine Ins. Co., Phila., Pa.
Phoenix Assurance Co., London, England
Phoenix Insurance Co., Hartford, Conn.
Providence Washington Ins. Co., Providence,
Queen Insurance Co., New York, N. Y.
R. I.
Reliance Insurance Co., Philadelphia, Pa.
Rochester Dept. Gt. American, New York, N. Y.
Royal Exch. Assurance Co., London, Eng.
Royal Ins. Co., Ltd., of Liverpool, Eng.
Scottish Union & Nat. Ins. Co., Edinburg, Scot-
land
Security Ins. Co., New Haven, Conn.
Springfield Fire & Marine Ins. Co., Springfield,
Mass.
St. Paul Fire & Marine Ins. Co., St. Paul, Minn.
Sun Insurance Office, London, England
Svea Fire & Life Ins. Co., Gothenburg, Sweden
Union Assurance Society, London, England
Union Ins. Soc. of Canton, Hong Kong, China
World Fire & Marine Ins. Co., Hartford, Conn.

Complete details of the Oil Insurance Association may be obtained from your insurance agent or broker.

Among the purposes for which the Oil Insurance Association were organized are:

To enable oil operators to secure sufficient dependable insurance to adequately protect their interests;
To furnish property holders and those controlling oil business expert engineering and inspection service. so methods of insuring this class may be standardized, and efficient fire protective devices installed and properly maintained, thereby stabilizing the business to the point which will enable insurance companies generally to accept the class at fair cost and under equitable policy rates;
To make available the most business-like insurance arrangement for all oil companies.

OIL INSURANCE ASSOCIATION
H. M. Carmichael, Manager
209 W. Jackson Blvd. Chicago, Ill.

Germany and Czecho-Slovakia were the best customers for Polish petroleum products. Each of these countries took 400,000 bbls, 450,000 bbls. were shipped to Danzig, a small part of which was locally consumed, the balance being exported mostly to the Baltic States. Danzig is the principal shipping point for paraffin; 22,000,000 lbs. were shipped therefrom in 1924 to France, Italy and other countries. Polish refineries reached an agreement on export prices in December, 1924, and since that time export prices are fixed at special conferences. Many refining companies maintain branch offices in Austria, Germany, France and Danzig to take care of their sales in bulk.

The exportation of crude oil is at present prohibited by law. This action was taken on the request of the State Oil Council which is composed of representatives of the different factories in the oil industry. The reason for this prohibition lies in the fact that crude oil production in Poland at present is less than the capacity of the refineries. When a stock of 4,500,000 bbls. of crude oil shall have been accumulated the ban on the export of crude oil will be lifted. Certain modifications of this ban designed to encourage exploitation in new fields by permitting limited crude oil exportation from new wells have been under discussion.

Aided by Government

The Polish Government has given many evidences of its desire to promote the development of the Polish oil industry. A special oil department exists in the Ministry of Trade and Industry. The creation of the State Oil Council, whose chairman is the Minister of Trade and Commerce, manifests the desire of the Government to receive the views of the interested groups on all projected legislation affecting the industry. A number of tax regulations have undergone modification in order to favor the industry. State railways transport export oil products at a rate which is 50 per cent less than the normal tariff. The railway rates are equal for all refineries regardless of their situation. A credit covering freight charges on oil products and mine equipment has even been allowed.

Unlike some other oil producing countries Poland does not limit investment of foreign capital in the oil industry. There are no regulations requiring special licenses for foreign companies to operate, or requiring special provisions in their charters such as that a certain number of directors must be Polish citizens. Foreign capital coming into Poland in the form of loans is free from income tax. Foreign companies may lease fields owned by the Government on the same conditions as Polish companies.

The Polish oil industry was developed in the beginning almost exclusively by Polish engineers and Polish capital. The influx of foreign capital dates from about 1900. The first foreign investments were made by Austrian, Belgian and Dutch capitalists; after their investments showed a return English and German capital followed. At present German capital plays scarcely any part in the Polish oil industry. Its former holdings have passed into French hands. French capital appeared in the years immediately before the war; since the war the number of French companies has greatly increased and now the greater part of producing wells, refineries, storage companies and pipe lines belong to French interests.

American Interest

Since the war, American capital has begun to show interest in Polish oil fields. At present about 50 wells are being drilled by American companies. The Standard Oil Co. is part owner of one refinery and the Vacuum Oil Co. owns another. The scarcity of capital in Poland during the reconstruction period has not permitted Polish interests to make extensive investments in the oil industry. Only a few of the larger drilling companies are Polish. All but one of the large refining plants are owned by foreign capital.

The Polish State itself besides owning one of the largest and best equipped refineries on the Continent has about 652,000 acres of oil fields which it has just begun to lease for drilling.

Increasing industrial and agricultural progress in Poland, which is a country with 28,000,000 inhabitants, points to a continuous growth of domestic consumption of petroleum products; expanding European requirements for oil afford a guarantee of a normal export market for surplus Polish production in view of the ready accessibility of the Polish fields to Continental consumers. The rate of expansion of the Polish industry will, however, depend on the extent of the drilling on the extensive, yet unexploited, oil bearing fields and this is largely a question of attracting more capital into the industry.

GUATEMALA READY TO ENTER THE OIL WORLD

(Continued from Page 118)

The Sociedad adopted the policy of developing its properties in cooperation with large foreign producers, taking an overriding royalty and a stock interest in an operating subsidiary formed to take over each block as negotiated. One such arrangement has been entered into and negotiations are pending on various other tracts.

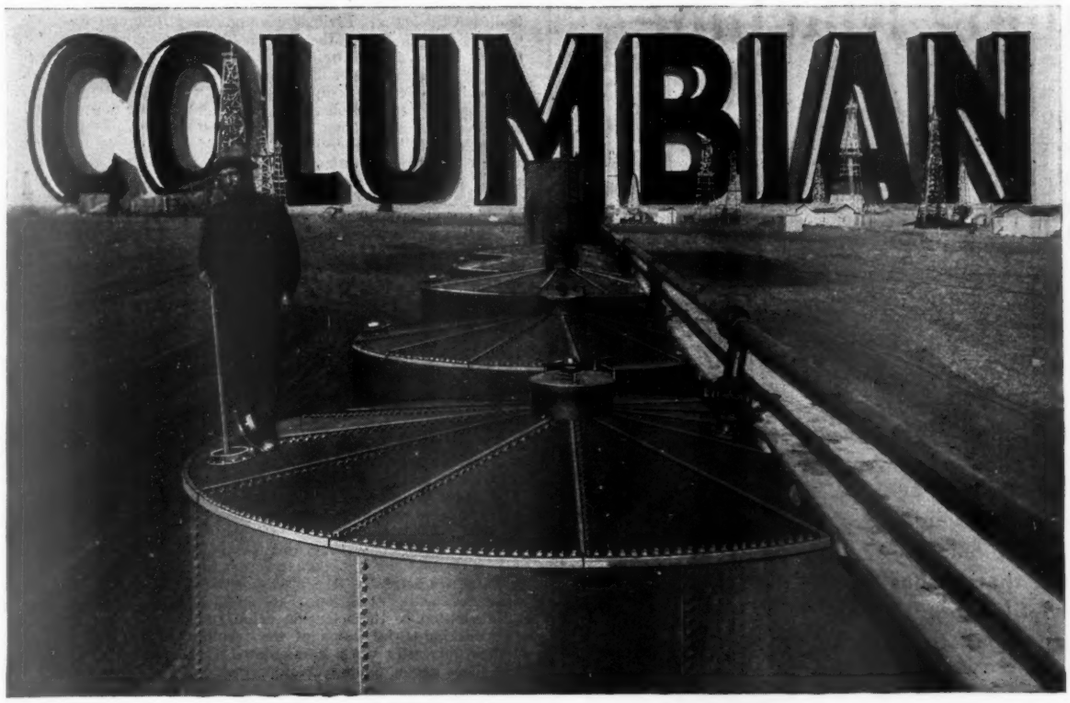
Nuyens & Co. was organized under Guatemalan laws in February, 1925, by interests associated with the Sociedad Petrolera Izabal-Castellanos y Cia, Ltd., to develop a group of petroleum claims located along the shores of Lake Izabal, in the Departments of Alta Verapaz and Izabal. This company's concession is identical in terms with that of the Sociedad Petrolera Izabal, and covers the hydrocarbon rights to 130,000 hectares. In April, 1925, a contract was entered into with the Consolidated Petroleum Corp., of Boston, to develop these lands, a subsidiary corporation being organized to handle operations. The latter, Perpetual Petroleum Corp., has just completed an examination of the property, and intends to start core drilling at El Estor on the shore of Lake Izabal, where headquarters will be established, during the coming winter.

The British Controlled Oilfields, Ltd., was an early entrant in Guatemala and holds two tracts totalling 260,000 acres. One of these properties is located in the Department of El Peten, surrounding the town of Santo Toribo, and the other is located on the Atlantic seaboard of the Department of Izabal. Both of these tracts, which are among the oldest concessions in Guatemala, were acquired after careful study by the company's geologists, who are said to have regarded the structural conditions as exceptionally favorable. The Guthrie anticline at Livingston and the anticline at Santo Toribio can be traced for long distances and have been visited by numerous geologists. Certain clauses in the Guatemalan hydrocarbon law laying emphasis on the question of reciprocity have been considered an obstacle to development of the British holdings, but there is reason to believe that these clauses will be eliminated shortly, and that the British Controlled Oilfields, Ltd., will carry out its program, which contemplates drilling early in 1926.

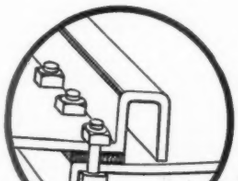
Seek American Operator

The Guatemala Oil Corp. which was organized in 1922 by residents of the United States and Central America, holds about half a million acres of land in the Departments of El Peten and Alta Verapaz. The Peten property, known as "Concession No. 9," is a small tract bordering on the holdings of the Sociedad Petrolera Izabal, the British Controlled Oilfields, Ltd., and the British Honduran frontier. In Alta Verapaz the Guatemala Oil Corp. has a tract of some 400,000 acres adjoining the property of Nuyens & Co. to the northward. The company is reported to be in negotiation with a large American operator to take over its holdings but is not otherwise active.

In addition to the above, various companies and individuals hold concessions, principally in the Departments of Alta Verapaz, Izabal and Zacapa. Urrutia & Co., Alfonso Sanches, Southern Explora-



Here is shown a cross-section of the vacuum valve mounted in the cover of the Columbian thief-hole hatch. Both vacuum and pressure relief valves of this type are regular equipment on Columbian Tanks. Buck Valves may be had if and as specified.



No angle rafter extras are needed on the Columbian Improved Lap Joint Deck. Stronger reinforcement is formed in the sections. It is integral with the deck.

Bolted Steel Tanks

Wherever There Is Oil

Outstanding construction and an unrivaled field organization are chiefly responsible for the fact that nearly 50,000 Columbian Bolted Steel Tanks have entered the oil fields of the world—an unmatched record.

Serving every oil field, there is a Columbian Dealer-Erector with adequate stocks and efficient erecting crews to take care of every requirement quickly and economically.

Among the exclusive features contributing to Columbian's outstanding construction is the improved lap joint deck. Each lap joint in the assembly is reinforced above with a box rib and below with a right angle flange—both formed in the deck sheets themselves. Thus the deck and its reinforcement are made integral. Greater strength and rigidity are obtained. All sizes from 65 to 10,000 barrels are made vapor tight.

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

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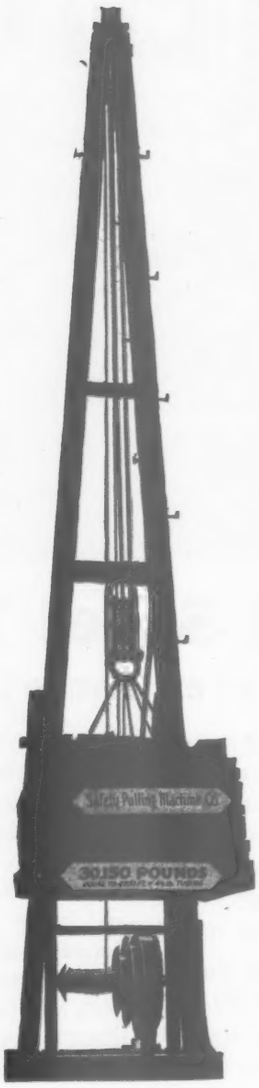
Eclipse Deepwell Pulling Machine

That one company recently purchased 6 of these machines to be used in a country 6,000 miles from the United States is proof this Pulling Machine is good.

Eclipse Deepwell up to 8000 ft. 2" Tubing Weight 3645

Wreckers also made to order, approximate weight 5000 lbs. One of our customers stated that he has pulled a weight equal to 100 tons with one of these machines.



Specifications Deep Well

Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2½ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

For sale by all Supply Companies

Manufactured by

SAFETY PULLING MACHINE COMPANY

INDEPENDENCE, KANSAS

tion Co., Ibarra y Companeros and a German resident of Coban are among the holders.

The first development will take place in the Department of Izabal, close to the shore. The Perpetual Petroleum Corp. plans to have its core drilling outfit on the ground at El Estor in January while simultaneously tests will be undertaken on the concession of the British Controlled Oilfields at Livingston, and on Concession No. 30 of the Sociedad Petrolera Izabal, immediately adjoining the latter. Concession No. 30 has been acquired by a New York operator close to the Consolidated Petroleum Corp., after examination. It is not expected that test holes will be deeper than 2,000 feet, as the oil bearing horizons lie comparatively close to the surface. The result of these tests will determine the value of this portion of Guatemala, but will not have any effect on the greater field in the Department of El Peten, where it is hoped to drill within a year from the present time.

ENLIST UNIVERSITY AND INDUSTRIAL MEN IN WORK

(Continued from Page 82)

lars to university professors for which they agree to carry on investigations along certain specified lines would get large direct results.

Another factor considered is that this plan would keep many men in the universities who annually leave because of financial consideration to go into industrial or consulting work. Assistance in such investigations by graduate students would prove helpful to the professor carrying on the investigation.

In addition to the scientific value and potential industrial value of the results of such university work, it is pointed out that there are a number of other results which would become apparent in a few years. The attention and interest of a considerable number of the best trained men would be directed to the scientific and industrial problems and possibilities of the petroleum industry. They would be available to the industry and would be one of the chief instruments through which the university researches would be applied in the future. Some of these men would choose to remain in university work and would scatter to other institutions where they would in turn create a new center of interest and group of students still further extending the lines of work originally undertaken. The university plan, it is pointed out, would assure a continuity of investigation over a considerable period, a matter of prime interest in view of the abstruse nature of the research planned.

Commercial Laboratories

As the plan develops it is also probable that use can be made of commercial or plant laboratories for special investigations for which they are equipped and that grants could be made to one or more of their employes for carrying on the work, and further that there would be instances where petroleum companies themselves would desire to turn certain of their own men over for special research work. Such use of any portion of a research fund would, of course, carry with it agreement on the part of the laboratories and personnel engaged that the results of the investigation would be made available to the entire industry.

The National Research Council is actively interested in the various research plans that have been advanced for the petroleum industry. The divisions of the council which are chiefly interested in petroleum are the division of chemistry and chemical technology and the division of geology and geography. The former is headed by Professor J. F. Norris, president of the American Chemical Society.

Early this year announcement was made of the formation of a committee on the chemistry of petroleum under Dr. Norris' division. The personnel of this committee follows: Dr. Benjamin T. Brooks, consulting chemist, New York, chairman; Dr. R. P. Anderson, technologist of the American Petroleum Institute; Professor J. R. Bailey, head of the department of chemistry of the University of Texas; Professor Cecil Boord, instructor of organic chemistry of Ohio State University; Dr. R. P. Brownlee, consulting chemist of Pittsburgh; Dr. H. S. Davis, of A. D. Little & Co.; Dr. Gustav Egloff, Universal Oil Products Co.; Dr. Harry L. Fisher, Goodrich Rubber Co.; Dr. W. A. Gruse, in chage of petroleum research at Mellon Institute for the Gulf Refining Co.; Dr. C. O. Johns, chief chemist of the Standard Oil Co. (New Jersey); Professor T. B. Johnson, instructor of organic chemistry at Yale University; Dr. E. Emmet Reid, professor of organic chemistry at Johns Hopkins University; Dr. N. A. C. Smith, in charge of chemical investigations for the Bureau of Mines at its Bartlesville experiment station; Dr. F. B. Thole, of the research staff of the Anglo-Persian Oil Co., London, and Dr. Gerald Wendt, head of the department of chemistry and physics at Pennsylvania State College.

National Research Council

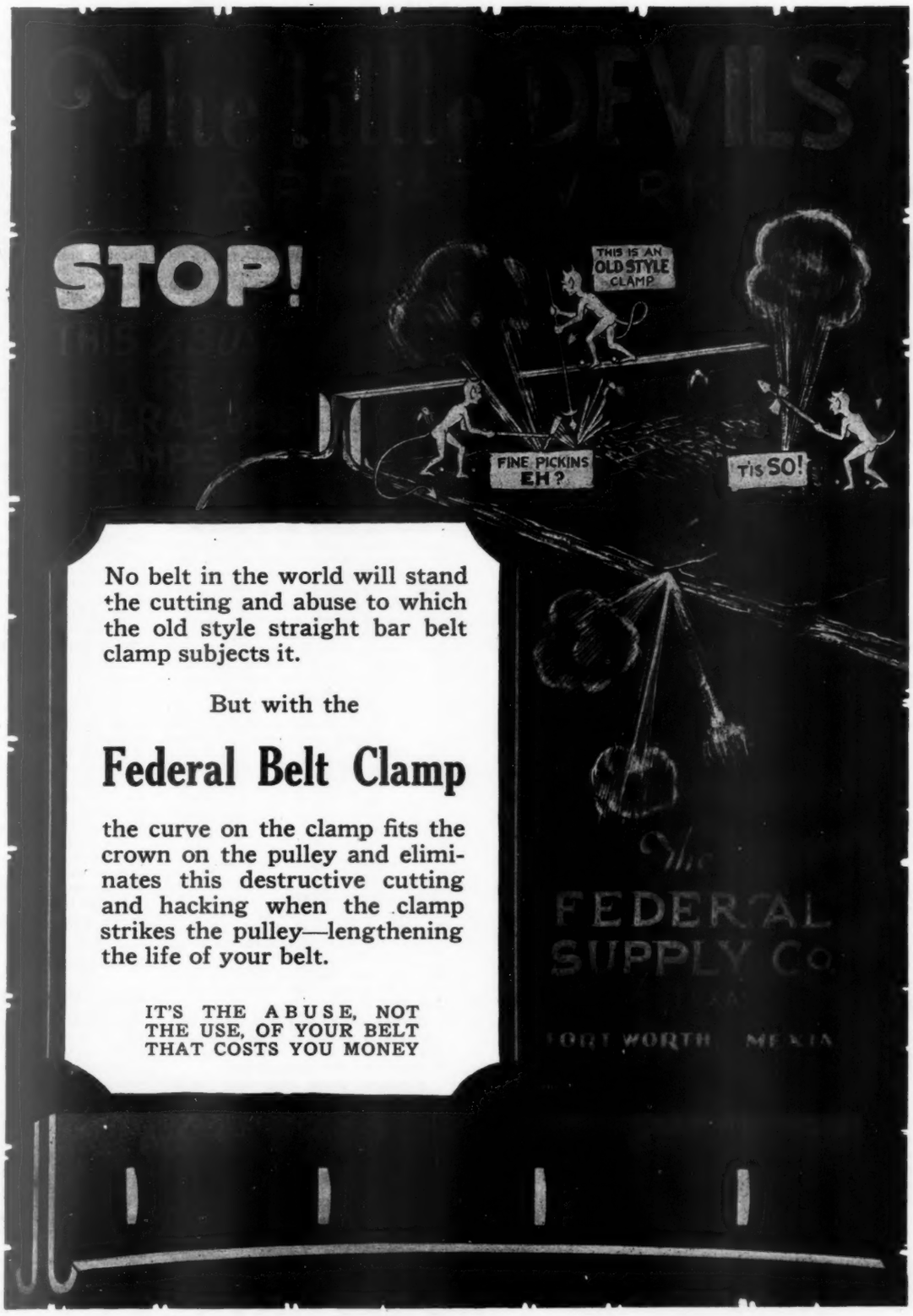
The division of geology and geography of the National Research Council is headed by Dr. David White, senior geologist of the United States Geological Survey, and comprises representatives of the following societies: Geological Society of America, Mineralogical Society of America, Palaeontological Society, Association of American Geographers, American Geographical Society, National Geographic Society, Society of Economic Geologists, American Association of Petroleum Geologists and the United States Geological Survey. The representatives of the American Association of Petroleum Geologists are W. H. Twenhofel, professor of geology, University of Wisconsin, and W. E. Wrather, consulting geologist, Dallas. The division has a committee on studies in petroleum geology comprising K. C. Heald, geologist of the Gulf Companies, chairman; Carl H. Beal, San Francisco; James H. Gardner, Tulsa; Chester W. Washburne, New York; David White, and W. E. Wrather. A sub-committee on micro-movements of fluids through rocks comprises C. N. Fenner, Washington; A. W. McCoy, Denver; Stanley Herold, Stanford University, California; James O. Lewis, Tulsa, and C. W. Washburne, New York.

The National Research Council is an outgrowth of the National Academy of Sciences, reorganized on divisional lines in April, 1916, under sanction of President Wilson. On May 11, 1918, the President issued an executive order which requested that the council be perpetuated with duties set forth as follows:

Scope of Research

"In general to stimulate research in the mathematical, physical and biological sciences, and in the application of these sciences to engineering, agriculture, medicine and other useful arts with the object of increasing knowledge, of strengthening the national defense and of contributing in other ways to the public welfare. To survey the larger possibilities of science, to formulate comprehensive projects of research, and to develop effective means of utilizing the scientific and technical resources of the country for dealing with these projects. To promote cooperation in research at home and abroad, in order to secure concentration of effort, minimize duplication, and stimulate progress; but in all cooperative undertakings to give encouragement to individual initiative, as fundamentally important to the advancement of science. To serve as a means of bringing American and foreign investigators into active cooperation with the scientific and technical services of the War and Navy Departments and with those of the civil branches of the Government. To direct the attention of the scientific and technical investigators to the present importance of military and industrial problems in connection with the war, and to aid in the solution of these problems by organizing specific researches. To gather and collate scientific and technical information at home and abroad, in cooperation with Government and other agencies and to render such information available to duly accredited persons."

The National Research Council divisions have rendered valuable aid in pro-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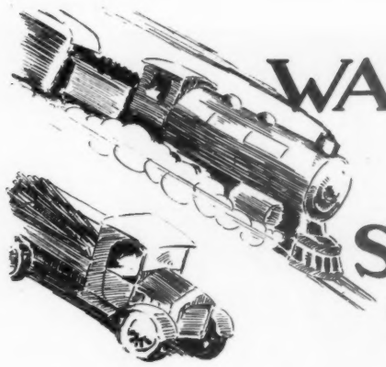

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Then again, Sheffield Sucker Rods may be secured from any of the stores of the INTERNATIONAL SUPPLY COMPANY. Prompt service and absolute satisfaction is therefore available in dealing direct with us or through this representative supply company.

SHEFFIELD SUCKER RODS

SHEFFIELD SUCKER RODS are manufactured in both the Box and Pin and Double Pin types. Three sizes, 5/8", 3/4" and 7/8" are available. Large stocks are on hand for immediate shipment from our plant or from all stores of The International Supply Company.

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Successors to
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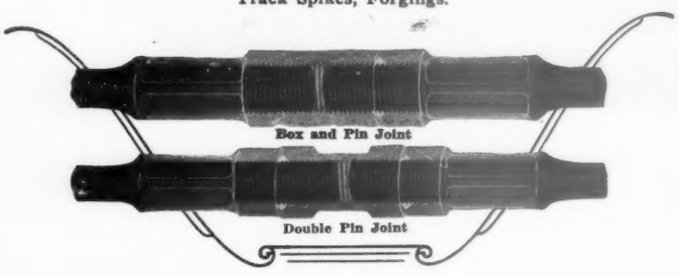
KANSAS CITY

Manufacturers of New Billet Reinforcing Bars, Rail Steel Reinforcing Bars, Blue Annealed Sheets, Merchant Steel Bars, Merchant Iron Bars, Bolt and Nut Products, Sucker Rods, Pull Rods, Track Spikes, Forgings.



Box and Pin Joint

Double Pin Joint

jecting topics for investigation and in supporting certain investigations, and it attempts to function as a clearing house for information on technical subjects. Most of its investigations are cooperative, and if it receives any portion of the petroleum research fund it will probably use the money in cooperation with existing laboratories, either industrial or university; the research council itself does not maintain laboratories.

The American Association of Petroleum Geologists has devoted a great deal of thought to the subject of petroleum research as related to geological problems. It has been felt the association is the logical medium for the handling of research of geological character and initial steps on a research program have been taken. Before going to the industry for funds, the association made up a fund contributed by its members as an earnest of good faith. This money is now financing microthermal experimentation relating to the origin of oil, being conducted under the direction of Dr. David White. Several other cooperative researches have been tentatively arranged for.

The research committee of the association comprises W. E. Wrather, chairman; Max W. Ball, Carl H. Beal, E. L. De Golyer, James H. Gardner, G. C. Gester, Wallace E. Pratt, W. van der Gracht and Chester W. Washburne.

INCREASE SHOWN ON DIESEL-ENGINED VESSELS

(Continued from Page 124)

creased 748,524 tons, or 45 per cent, over 1924.

There are three classes of vessels burning oil fuel of some kind, namely, steamers burning oil under their boilers, Diesel ships burning Diesel oil for power and motor auxiliaries using gasoline. The last named are numerous but represent only a small aggregate tonnage.

Lloyd's classifies steamers of 100 tons and over equipped for burning oil fuel by countries and it is shown that there are 3,490 vessels of this class, aggregating 17,804,122 tons.

Fifty per cent of all oil burning steamers are of American registry, and 28 per cent British, as shown in the following table:

Steamers of 100 Tons and Over Fitted For Burning Oil Fuel

	1925	
	No.	Tons
British	844	5,164,601
American	1,855	8,999,050
Other countries	791	3,640,471
Total	3,490	17,804,122

America Trails on Motor Ships

The United States has failed to keep pace with other countries in the quantity development of the Diesel motor ship. In 1925 of the total tonnage of motor ships of 100 tons and upwards amounting to 2,403,070 tons, 811,006 tons, or 34 per cent were of British registry. Total American tonnage was 230,715 tons, or less than 10 per cent.

Norway and Sweden have played leading roles in putting out the motor ship. Both countries have a larger motor ship tonnage than the United States.

Norwegian motor ships total 324,567 tons and Swedish, 259,900 tons. Germany falls only a trifle short of this country, with 233,612 tons. The following table classifies world motor ships, not including motor auxiliaries:

World Motor Ships of 100 Tons and Over

	1925	
	No.	Tons
British	239	811,006
American	138	230,715
Norwegian	156	324,567
Swedish	120	259,900
Other countries	413	776,882
Total	1,116	2,403,070

World Motor Ship Building Activities

The report of Lloyd's Register through the second quarter of 1925 showed that now almost 50 per cent of the world's shipbuilding is composed of motor ships. In Great Britain and Ireland motor ships represent 36.5 per cent of the total construction, while the figure for other maritime countries is 57.3 per cent, making the proportion for all countries combined 47.7 per cent, as compared with 42 per cent for the quarter ended March 31, last, and only 28 per cent a year prior to that. The tonnage of motor ships building during the first two quarters compares as follows:

World Motor Ships Building

	June 30 Tons	Mar. 31 Tons
Great Britain and Ireland	399,070	359,920
Other countries	730,842	661,711
World total	1,129,912	1,021,631

On construction of all kinds, Great Britain and Ireland's share is nearly half the world's total.

A new feature of Lloyd's returns gives additional evidence of the development of the motorship. Data showing the indicated horse power of marine engines now building or being installed throughout the world shows that out of a total of 1,721,378 I. H. P., 353,144 represents the aggregate for steam turbines; 559,970 for reciprocating steam engines, and 808,264 for motor propulsion. The indicated horse power for motor-driven vessels is therefore only 100,000 I. H. P. less than for steam turbines and steam engines combined.

While this country has fallen behind in motorships, there is evidence of a tremendous increase in the near future. The Shipping Board program is now providing for considerable Dieselization of existing tonnage, some of the work having been contracted for and under way. The Ford bid for 200 Shipping Board vessels which the board offered for scrapping contained a reservation by the Ford company for the right to Dieselize any of the ships of design No. 1023. There are 50 of these vessels which are oil burners and range from 5,000 to 5,340 deadweight tons.

Of the total launchings in 1924, 22 per cent of the tonnage represented motorships. The figures shows 2,248,351 tons launched of which 502,398 tons were motor-driven ships. Motor ships of British registry which came down the ways in 1924 totaled 238,859 tons, while this country showed only 39,933 tons.

World Oil Burner Growth Since 1914

The Bureau of Navigation, Department of Commerce, tabulates world oil burners of 500 gross tons and over, presenting original figures for American registered vessels, while all other figures are prepared from Lloyd's Register. The slight differences in figures presented in the first part of this article with the following figures, is accounted for by the fact that they cover vessels of 500 tons and over, while preceding tables were for ships of 100 tons and over.

The Bureau of Navigation figures make it possible to compare the growth of oil burners and of motor vessels with prewar figures.

In 1925 total oil burning vessel tonnage is 19,372,615 tons, against 1,721,747 tons in 1914.

In 1925 motor ship tonnage is 2,157,273 tons, against 194,019 tons in 1914.

GULF PORT SHIPMENTS DECREASE IN OCTOBER

HOUSTON, Tex., Dec. 26.—Exports of crude oil through the Galveston customs district during the month of October were 4,853,806 gallons, valued at $324,814. Compared with one year ago this is a decrease of 526,102 gallons, but represents an increase in value of $51,590, accounted for by higher prices prevailing.

The bulk oil movement through the Texas City port, 10 miles north of Galveston on Galveston Bay, during the month of November totals 1,808,291 bbls., of which 1,569,404 bbls. of crude and 53,154 bbls. of bunker oil was outbound and 185,733 bbls. received at the port from Mexico. The total shows a decrease of 11,015 bbls. compared with the October movement.

The Crown Central Petroleum Corp. received a total of 305 tank cars, or 66,000 bbls. of crude at its refinery on the Houston Ship Channel from the Webb County (Laredo) pools during November. The company recently purchased production in those pools and in addition is a buyer of crude from other producers.

IN the development of Hinderliter patented Tools, the Hinderliter Tool Company has been an important factor in reducing the investment and adding to the safety of present day drilling operations.

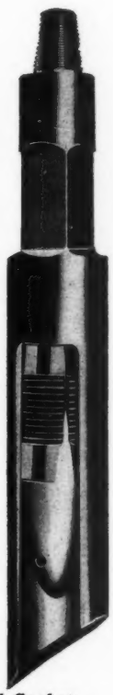
The genuine patented tools, manufactured exclusively by the Hinderliter Tool Company, are available only at Hinderliter Stores, located in all important Oil Fields.

Eccentric Combination Socket

Eccentric Grab

Kick-off Tool

Casing Collar Ripper



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BRANCHES IN PRINCIPAL OIL FIELDS

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New Die Design Means Easier Threading

The greater rake, sharper cutting angle and narrower face of the newly developed dies of the Oster 42 Receder cut sharp, leak-proof threads with far less pull than the old-fashioned kind.

Equipped with universal centering chuck or bushings as desired. Patented chip shield protects lead screw from dirt and chips.

A better built, more carefully finished, easier cutting die stock that will outlast two ordinary tools.

Capacity of both plain and ratchet models: 1 to 2 inches, inclusive. See this new tool at your supply house or write direct to

OSTER

The Oster Manufacturing Company
Manufacturers of the most complete line of pipe-threading equipment in the world.
2089 E. 61st Pl., Cleveland, Ohio

CENTRAL WEST

(Continued from Page 52)

every available acre running from the northern part of Maumee Township, in Indiana, in a southeast direction to a point south of Payne, in Paulding County, Ohio, has been leased by the large operating companies as well as individual operators, and it looks as though a large amount of work will be done in the prospective new field. If weather conditions are not too severe wells will start up shortly after the holidays; if not early spring will see the biggest drilling campaign along this territory ever seen in either Maumee Township, Allen County, Indiana, or the Payne Field of Paulding County, Ohio.

Illinois

The Allendale Field of Wabash Township, Wabash County, is the most active part of the Illinois Field at this time and there does not appear to be any let up regardless of the finding of a few dry holes close in to producing wells. This appears to be the way the entire development of the Allendale Field runs and has since the first development work started back in 1912. A dry hole cuts but little figure, outside of the cost and time required to drill.

East of Allendale, in the Stillwell Pool of Wabash Township, the Max Oil Co.'s No. 5 well, 1,000 feet from the north line and 350 feet from the east line of the Holson-Dorney farm, in the northwest quarter of Section 18, is credited with a production of 95 bbls. Sand was topped at 1,466 feet and drilled 24 feet in. The Hope Oil Co.'s second test, 600 feet from the north line and 200 feet from the west line of the W. M. Banks farm, in the northwest quarter of Section 6, produced 35 bbls.; top of sand at 1,368 feet and drilled 12 feet in. The Adams Corner Oil Co.'s No. 4 on the Mack Madden farm, Section 7, and Joseph S. Young, Jr., and others' No. 5 on the H. A. Fox farm, Section 1, are both reported showing for big producers, as is the Wabash Oil Co.'s No. 5 on the S. J. Stillwell farm, Section 1, and on the farm in which the initial well of the pool was found.

In Montgomery Township, Crawford County, Henry C. Lloyd and others made a nice strike in their No. 6 well, 150 feet from the south line and 800 feet from the west line of the Mary Duncan farm, in the southwest quarter of Section 21. The well is doing 50 bbls. from a depth of 956 feet. In the same township, R. E. Young and others' No. 3 well, 150 feet from the north line and 550 feet from the west line of the John Booker farm, Section 28, pumped 4 bbls. at a depth of 953 feet.

Central Ohio

Three new completions are reported from the old Chatham Field in Chatham Township, Medina County, in the Central Ohio Field. E. R. Edson Sons Co.'s No. 16 well, 450 feet from the north line and 250 feet from the west line of the George W. Packard No. 2 farm, Lot 3, was a dry hole at a depth of 376 feet. No. 15 well 650 feet from the north line and 250 feet from the west line of the same farm, pumped around 2 bbls. at 374 feet, and No. 17, in the northwest corner of the same farm, pumped 5 bbls. at 378 feet.

KENTUCKY-TENNESSEE

(Continued from Page 52)

wells were distributed by counties as follows:

County—	Comp.	Wells	Prod.	Dry	Gas
Barren	10	5	49	5	0
Lawrence-Johnson	4	4	24	0	0
Johnson-Magoffin	3	3	44	0	0
Wayne	3	3	12	0	0
Estill	3	3	9	0	0
Warren	3	3	73	0	0
Owensboro Dist.	3	1	10	2	0
Allen	2	1	8	1	0
Russell	2	1	10	1	0
Floyd	2	0	0	0	2
Powell	2	2	8	0	0
Lee-Owsley	1	1	10	0	0
Simpson	1	1	4	0	0
Clay County, Tennessee	2	0	0	2	0
Total	41	28	261	11	2

Eastern Division

A perfect week is recorded in the eastern division as out of a total of 18 completions 16 were oil wells, and two were gassers. It appears that immediately after the New Year considerable wildcat activity will be in progress from the Idamay Field, on south through Clay and Knox Counties, as a number of locations have already been staked off. In Clay County, Beattyville parties are rigging to drill a test on Red Bird Creek. In Owsley County the Standard Oil Co. of Kentucky is starting a well at Dripping Rock. The Fordson Coal Co., which owns in the neighborhood of 100,000 acres in Clay County, has made a number of deep tests with core drills, several of which had oil and gas showings. Knox County is the latest eastern Kentucky Field to come into the limelight, and a large acreage is being taken up in the vicinity of Indian Creek, where geological reports have been encouraging. The McBrantin Oil Co. has been organized to drill several tests, and Oklahoma operators have started drilling near Bailey Switch, Knox County.

North Weir Field

In District No. 22 of the North Weir Field of Lawrence and Johnson Counties, the Union Gas & Oil Co.'s No. 7 C. E. Frailey is estimated for 8 bbls. from the Weir sand, while No. 5 on the C. K. Dobyne No. 2 farm, drilled by the same concern is pumping 5 bbls. from the Weir. Garrison & Townsend's No. 7 L. T. Sparks is making 8 bbls. from the Weir at an approximate depth of 870 feet; Garrison & Townsend's No. 3 W. W. Bailey is pumping 4 bbls. from the Weir.

South Weir Field

The South Weir Field of Johnson and Magoffin Counties, aside from the feature well reported at the start, had two small pumpers. In District No. 29, near Mine Fork, Hudson & Collin's No. 5 Oscar Wheeler is a 10-bbl. pumper from the Weir sand at about 1,000 feet in depth. R. G. Gillespie's No. 4 Mary Burke, same vicinity, is reported good for 4 bbls. at 1,100 feet.

Wayne County

In Wayne County, E. M. Shearer's No. 14 N. H. Crofton, District No. 13, is good for 5 bbls. from the Beaver sand; Superior Oil Corp.'s No. 12 James Dabney, District No. 2, showed for 5 bbls; Shearer, Marsh & O'Keefe's No. 6 J. A. Brown, District No. 3, made 2 bbls. on the jack from the Beaver sand.

Other Completions

In Floyd County, Ohio Fuel Oil Co.'s No. 4 J. D. Turner in the Left Beaver Creek gas pool, made 300,000 feet of gas from the Berea sand at about 2,200 feet; the Thompkins Oil & Gas Co.'s No. 1 Rhoda Turner heirs is showing for about 250,000 feet of gas from the Corniferous sand. This lease is in District No. 21.

Combs Brothers Development Co. brought in a 10-bbl. starter in its No. 4 Fred Adams, in District No. 25, of the Lee-Owsley County Field.

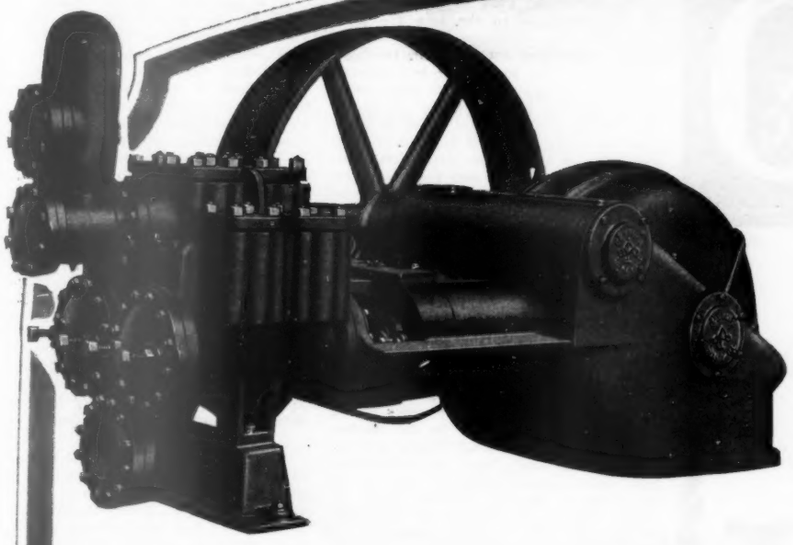
Miller & Chiles are reported with two small strippers on the George Cain place in District No. 10, Estill County. No. 1 made 2 bbls. and No. 2 a like amount from the Corniferous sand. In District No. 7, Estill County, C. O. Ansler's No. 1 Reed heirs, is estimated at 5 bbls. from the shallow Corniferous sand. The Reed well also extended production 1,500 feet to the southwest.

In Powell County, W. O. Dunham's No. 1 A. Stewart is showing for 3 bbls. on power; and the Petroleum Exploration's No. 11 P. M. Goff heirs, is pumping 5 bbls.

Western Kentucky

According to reports received from Adair County, the Wood-Haislet and others' well on the G. W. Brockman, in the Hopewell Pool, struck a flow of oil at 50 feet, estimated at 5 bbls. of 25 Baume oil. The well is located on the very top of the Hopewell structure and is about 300 feet from the old Garnett well drilled in 1866. Six and a quarter-inch casing has been set in the Brockman test at 144 feet.

The Guthrie No. 1 drilled by Wood & Haislet has been capped at 805 feet, 120 feet below the Pencil Cave, where a good oil showing was encountered. The Guthrie is in the extreme southern portion



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of Adair County near the Cumberland County line.

Warren County

The Davenport Pool in western Warren County came to the fore the past week with three excellent producers. The Lincoln Co.'s No. 3 Call Snell, reported elsewhere in this article, at late reports is holding up at around 15 bbls. daily from a sand at 100 feet below the shale. The Golden Fluid Oil Co.'s No. 3 Manning is making about 35 bbls. of oil and 300 bbls. of salt water daily from the Mississippian lime at 500 feet. As the water line is lowered in this well the oil flow becomes larger.

In the northwestern extension of the Davenport Pool, the Onsel-Harnahan Oil Co. brought in a 20-bbl. starter in its No. 7 Brownfield, 400 feet northeast of No. 6. Shale was from 1,120 to 1,205 feet and the sand from 1,300 to 1,318 feet. The bottom of the hole was 1,326 feet.

Barren County

Five producers, increasing production 49 bbls. daily, and five dry holes is the record of the past week in the Barren County. The No. 9 Duff which came in with a large flow of gas and caught fire last week is now making 25 bbls. of oil daily from a sand at 160 feet below the shale. This well, drilled by the Consolidated Gas Co., is in the Beaver Creek Pool, north of the Hall Baker. No. 8, on the same property, is pumping 8 bbls. from the same depth. On the adjoining Depp tract, the Consolidated Gas Co.'s No. 12 is a 3-bbl. stripper at 160 feet below the black shale.

One mile northwest of Glasgow, the Keyes Oil Corp., finished two wells. The No. 2 Jump estimated at 4 bbls. at 548 feet and No. 1 J. B. Rogers, good for 2 bbls.

The five dry holes were in the Emery-Moore and Gorby pools. In the former pool, the dry ones were as follows: Houchins Leasehold Co.'s No. 19 Pitcock, at 185 feet below the shale; same concern's No. 4 Gumm at 460 feet, 175 feet below the shale. In the latter pool, Porter and others' No. 13 McGlocklin, L. J. Emery, Jr., and Sons' No. 1 Greer, and the same parties' No. 6 Fannie Preston at 650, 515 and 370 feet, respectively.

Drilling Progress

Emery-Moore Pool—Ziegler Brothers' Nos. 10 and 11 Drinon, drilling at 400 and 300 feet respectively; Fred Moore's No. 12 fee, drilling at 450 feet; Ziegler Brothers, Scott & Hice's No. 5 P. Bradford, progressing at 170 feet; Star Oil Co.'s No. 5 Russell, on top of the sand.

Gorby Pool—L. J. Emery, Jr., & Sons' Nos. 2 and 3 Richardson, on top of the sand; same parties' No. 20 Depp-Greer spudding at 50 feet; Hiland Oil & Gas Co.'s No. 1 Cassidy, drilling in; No. 12, spudding.

Hall Baker and Beaver Creek Areas—Harrington & Norris' No. 2 Maddox heirs, making headway at 300 feet; No. 3 White & Smith, going downward at 350 feet; Wood Oil Co.'s No. 12 W. M. Church, drilling at 275 feet; Consolidated Gas Co.'s No. 10 Duff, spudding; Lewis' No. 1, of Williams and others, shut down with no showing in the regular pay; T. L. Gorby's No. 1 John Francis, shut down with no show at 701 feet; No. 1 Matthews, drilling at 200 feet.

At Coral Hill, the Esslinger Oil Co.'s No. 1 Glass was progressing at 310 feet.

Barren County has led the entire State of Kentucky in completions during the past 12 months and has increased its production to twice the amount it was in January. It has also gone into second place in the amount of production in western Kentucky, passing Allen in October. The producers in Barren County receive the top price of Somerset for their oil, which is purchased by the Paragon Development Co., a subsidiary of the Paragon Refining Co., of Toledo, Ohio.

Although the wells come in small, usually from 3 to 12 bbls., they hold their production in good shape, and pay themselves out in a short while. It is thought that the drilling operations will fall off considerably during 1926, however, as the proven areas are about drilled up, and wildcatting during the past several months has been unproductive.

Owensboro Field

It is reported that the White Plains Oil & Gas Co.'s second well in the Midkiff Pool, a mile north of the discovery well, is dry in the Barlow sand and will be plugged back to the shallow Jett sand where it will be given a dose of nitro. The discovery well, brought in a couple of months ago in the Barlow sand, is holding its initial, which was 10 bbls., in good shape, and quite a disappointment was registered when the Ward well failed to make a showing in the Barlow. The White Plains Co.'s Brown well, 400 feet west of the discovery well, was progressing at 243 feet. The Pennsylvania-Indiana Oil Syndicate's No. 1 W. P. Griffith, adjoining the Midkiff, is also reported dry in the Barlow and Jett sands. The stray sand, however, is showing for a small well after a shot. It is now being tested.

Fred Carson's No. 6 Abe Howe, offsetting No. 8 on the Abe Howe 45 acres, is good for 10 bbls. from the Barlow sand at about 790 feet in depth.

Drilling Wells

The Kentucky Oil Syndicate has moved to a location on the J. Burdette farm to offset the E. C. Morrison to the west; Pearl Stevens' No. 1 Guy Barlow, drilling at 625 feet; Bert Thompson's No. 2 Gabbart, 400 feet northeast of No. 1, is being rigged up; Panther Creek Oil Co.'s No. 11 J. W. Smith, 400 feet southwest of No. 10, drilling at 250 feet; C. A. Leeper's No. 7 Embert Barlow, drilling at 220 feet; Pirtle & Smith's No. 3 Howard, 400 feet northeast of No. 2, drilling at 120 feet; Creek Drilling Co.'s No. 5 Dave King, going ahead at 350 feet; White Plains Oil & Gas Co.'s No. 1 Brown, drilling at 321 feet; Pennsylvania-Indiana Syndicate is moving a rig to the C. A. Kelley tract, offsetting the Griffith test to the west; Foster Oil Co.'s No. 1 R. B. Powers, is showing for 4 bbls. in the Jett sand, but is being drilled on down to the Barlow sand; Chicago Petroleum Syndicate's No. 4 Ira Crowe, drilling at 310 feet; C. A. Leeper's No. 4 J. S. Collier 13 acres, drilling at 250 feet.

Western Completions

In Simpson County, Mullin & Reagle's No. 9 Jim Peart, at Pilot Knob, is making 5 bbls. on power at 611 feet, after a 60-quart shot.

In the Creelsboro Field of Russell County, the Cranahan Oil Co.'s No. 4 B. F. Leach, completed some time ago, is reported as pumping 10 bbls. and the test on the N. Blesdee, drilled by Creelsboro parties, is reported a duster.

Neil-Huebring & Co.'s No. 13 Korley, southwest of Scottsville, in Allen County, showed for 8 bbls. on the jack from a sand at about 40 feet below the shale. Boller & Stump's No. 1 C. R. Boller, at Gainesville, is dry and plugged at 400 feet.

Tennessee News

Since the completion of the Grey well, 7 miles north of Tinsley's Bottom, in Clay County, Tennessee, considerable acre has changed hands, and several contracts for immedite drilling have been let. H. Z. Clarke and associates, who brought in the Grey well, are moving to a location on the K. Thurman tract, 300 feet east of the Grey well.

C. F. Dickson, of Cincinnati, Ohio, has entered the Clay County Field, making his first purchase around the Grey well at Celina. It is understood Mr. Dickson will at once start an intensive drilling campaign on his holdings. His first test will be made on the Am. Hamilton farm on Penitentiary Branch.

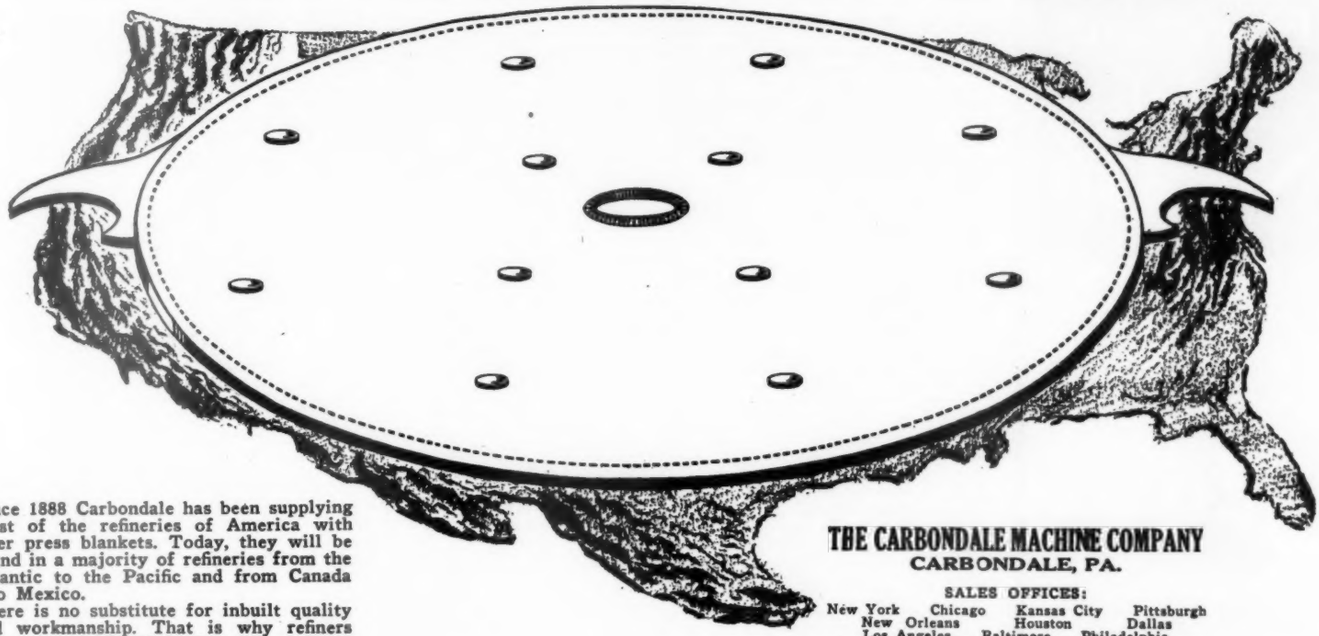
Another important event in the Tennessee Field is the entry of P. W. Sherman of Lawrenceville, Ill. Mr. Sherman has made temporary headquarters at Cookeville, Tenn., and according to reports, has let contract for two wells which are to be started shortly after the first of the New Year.

CALIFORNIA FIELDS

(Continued from Page 48)

in California today is No. 1 Bixby of the Marland Oil Co. at Seal Beach and,

From Coast to Coast



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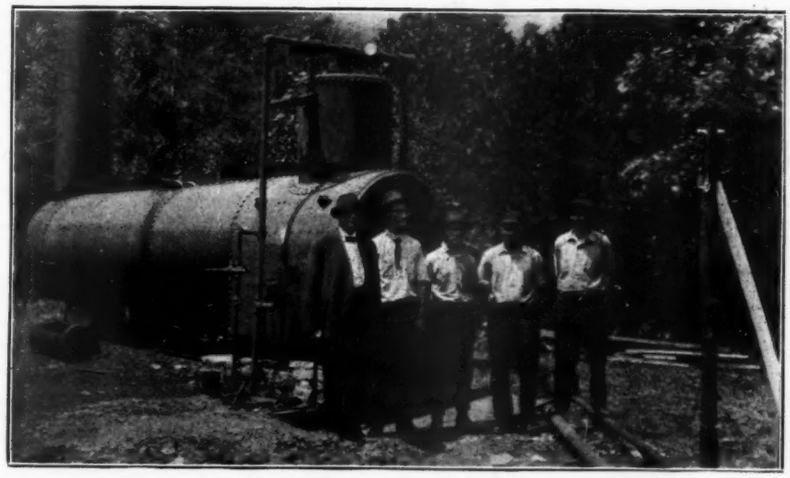
Left to right: F. E. Siggins, Supt., Michael Strosnider, driller; Elmer Matson, tool dresser; Frank Altman, tool dresser; Earl Strosnider, driller.



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although some 15 or 20 feet of good looking oil sand has been penetrated, there is some doubt whether the company will be able to finish this hole as a commercial producer. This is due to the fact that the company is experiencing the same difficulty with water which the Shell has been battling with on its Bryant lease for the past year and a half. The importance of the Marland's Bixby test lies in the fact that it indicates there is an oil sand underlying the property and that the company has an excellent chance of picking up the real pay some distance further north. Geologists who have made a detailed study of this area still differ in their opinion, some believing the productive area will be southeast of the Marland property, while others believe it will be to the northwest. The latter theory is becoming more general, notwithstanding No. 1 Bixby of the Marland picked up the pay immediately 150 feet deeper than the Shell. Those who are of the opinion that the productive area lies northwest of the present Marland well believe this test is on the south dip of a limited anticline and, although the Bryant wells of the Shell are on the same structure, it is plunging to the east at that point.

Judging the situation on developments to date, it must be acknowledged that the Marland has an exceptionally good looking piece of property which warrants further drilling even if the present hole does not show up any better. The Standard has leases adjoining the Marland holdings on both the west and north and this company will undoubtedly put down a test if the latter does not drill further north and west. The Associated has reached a depth of 1,520 feet in its first diamond core test on the Hellman property east of the Marland and Shell. It is believed the Associated will be obliged to go to around 1,800 feet in order to find the markers required to log the change in formation.

The Shell recovered the fish lost in No. 1 Menchago up in Brea Canyon and drilling has again been resumed, after a delay of several weeks. The Calwin Oil Co. has unanimously been awarded the record for persistency and, although the company is starting its sixth year of prospecting in the Eagle Rock section, it has nothing to show for its efforts except 5,719 feet of hole. This location has been generally condemned by geologists but the company is, nevertheless, continuing work. The Pan American is going ahead quite rapidly with its second wildcat, No. 2 Pacific Southwest, in the vicinity of El Segundo, the hole being reported early this week at 2,750 feet. The Bandini Petroleum logged the usual hard gray sand in its No. 6 De Baker at Bandini and, although 4,152 feet of hole has been made to date, there have been no showings of any kind.

The Milham Exploration Co. is abandoning its first test on the Conroy property in the Newhall-Saugus area but will start another hole approximately 1,500 feet south. The Petroleum Securities at 4,465 feet is getting quite deep in the Palos Verdes sector and, although no encouragement has been received to date, drilling will continue until a conclusive test has been made before pulling out. No. 1 Palos Verdes of the A. T. Jergins Syndicate, approximately 2 miles away, is going ahead in a sandy shale at 2,665 feet. The Standard is held up with water trouble in its No. 1 Von Schriltz at Santa Ana Gardens and, although this hole for a time looked very promising, a troublesome water condition has arisen which may result in an abandonment at 5,219 feet. No. 1 Plavan, in the same general area, is rotating ahead in a sandy blue shale at 3,198 feet. The Shell's Talbert wildcat is in a hard gray sand at 3,900 feet.

Northern California Wildcats

There were no developments of interest in any of the wildcats drilling north of the Tehachapi during the week and, although several more tests will be started soon after the first of the year, none of them looks really promising. There has been considerable leasing of late at several points in the San Joaquin Valley and along the coastal region, but a good many leases made do not call for immediate work. The Shell acquired an unusually large tract a short time ago when the company leased approximately 10,000 acres in Santa Barbara County from the Union Sugar Co. The property is in wildcat territory and, although the Shell is not required to start operations within three years, it is quite possible a test will be drilled some time during 1926. The tract, which is located west of Santa Maria, has not been given a test of any kind. George F. Getty recently took over 20 acres in Section 12-29-23 in the vicinity of Buttonwillow on a five-year basis and will not be obliged to drill within this time unless oil is developed on adjoining property. The lease runs for 20 years on a one-eighth royalty basis. The Standard recently acquired 400 acres of prospective oil land near Lerdo in the San Joaquin Valley but it was also secured on a long time lease and it is not believed that the company will drill within the next two or three years. Half of the property is in Section 26-27-26 and the balance in Section 1-28-26. The company also acquired 80 acres of prospective oil land south of Poso Creek and east of Kimberlina in Section 26-27-26. The Marland added 80 acres to its holdings by tying up the Lindquist property in Section 18-25-26 upon payment of a nominal bonus. There has been a little leasing by independent operators up around San Jose and while a test or two may be put down in this area, conditions do not look any too favorable for the development of commercial production.

NORTH LA.-ARKANSAS

(Continued from Page 40)

and sand, arranging to cement casing at 1,628 feet in No. 1 Tullos, Section 25-10-1e, and is drilling at 1,280 feet in No. 1 Urania, Section 24-10-2e.

Ohio Oil Co. set 10-inch at 83 feet in No. 1 Urania, Section 24-10-1e, 1 mile north of Tullos.

Morehouse Parish

United Carbon Co. is drilling plug at 2,361 feet in No. 1 Grey, Section 16-20-5, 5 miles southwest of Bastrop.

Ouachita Parish

Sam D. Hunter is drilling at 2,000 feet in No. 1 D'Arbone, Section 32-19-3e, 6 miles west of Monroe gas field.

Palmer Corp. set 6-inch at 2,136 feet in No. 1 K. Cole, Section 36-20-4e, 10 miles northeast of Monroe.

Southern Carbon Co. set 12-inch at 180 feet in No. 47 Fee, Section 5-19-4e, in the Monroe gas field.

United Carbon Co. is letting gas blow at 843 feet in No. 1 Archie, Section 24-20-4e, in the north end of the parish and 8 miles southwest of Bastrop.

Union County

Arkansas Fuel Oil Co. is moving in rig for No. 1 Reeves, Section 14-20-1e, 4 miles southeast of Farmerville.

United Carbon Co. set 8-inch at 925 feet in No. 1 Schwab, Section 2-20-3e, half way between Farmerville and Bastrop.

Cotton Valley District

Fortuna Oil Co. is drilling in lime at 3,925 feet in No. 1 Bible, Section 8-20-9.

Gulf Refining Co. set 10-inch at 368 feet, drilling at 700 feet in No. 1 R. H. Coyle, Section 15-21-10; set 10-inch at 357 feet, drilling at 600 feet in No. 1 Marshall, Section 21-21-10.

Humble Oil & Refining Co. is drilling in lime at 3,906 feet in No. 1 R. R. Cox, Section 22-21-10.

R. W. Morten is bailing, showing little gas and salt water at 2,546 feet in No. 1 Josey & Massey, Section 27-21-10.

Ohio Oil Co. has derrick up for No. 1 Riggins-Cox, Section 15-21-10; drilling in shale at 2,680 feet in No. 1 W. Cox, Section 23-21-10; rigging up to drill No. 21 and No. 22 Grey, Section 26-21-10; set 8-inch casing at 2,484 feet and 36-inch pipe line in No. 1 A. J. Hodges, Section 23-21-10; drilling in sand at 2,553 feet in No. 2 E. W. Hodges, Section 15-21-10; drilling at 2,260 feet in No. 3 Sandlin, Section 27-21-10.

Palmer Corp. is drilling in shale and lime at 4,580 feet in No. 1 Davis, Section 23-21-10.

Victor Wenzell has shut down at 1,100 feet in No. 1 Lunsford, Section 10-19-9.

Arkansas Wildcats

Ashley County—Rhodes & Kirker are drilling in gumbo at 955 feet in No. 1 Bledsoe, Section 20-15-7, 16 miles south of Monticello.

Calhoun County—Gulf Refining Co. is drilling at 2,750 feet in No. 1 Freeman Lumber Co., Section 31-15-13, 6 miles east and a little south of Camden.

Cleveland County—Simms Oil Co. is drilling in gumbo at 3,079 feet in No. 1 Mosley, Section 19-10-11, 8 miles east of Fordyce.

Columbia County — Hude & Aarnes have shut down in red shale at 3,001 feet in No. 2 Brown, Section 13-15-20, in the Stephens Field.

Drew County—McClintock & Goodka are reaming to set 6-inch casing at 1,810 feet in No. 1 Ogle, Section 35-13-5.

Hempstead County—Burton and others set 8-inch at 1,000 feet in No. 1 Garland, Section 23-10-25, 4 miles north of Washington.

Tarver and others are drilling in hard rock at 2,555 feet in No. 1 Swafford, Section 14-11-25, 1 mile east of Washington.

Lafayette County—Arkansas Fuel Oil Co. is drilling at 1,650 feet in No. 2 Allen, Section 19-19-24, 1 mile east of Bradley and topped Nacatoch sand at 1,849 feet, drilling in lime at 1,865 feet in No. 1 Red River Land Co., Section 18-19-24, 1 mile north of the Allen well.

Humble Oil & Refining Co. is drilling at 1,000 feet in No. 1 Knighton, Section 3-16-23, 6 miles east and a little north of Lewisville.

Little River County—Mellick Oil Co. is drilling at 1,150 feet, corrected depth, in No. 1 Hawkins, Section 10-11-31, formerly reported as Johnson and others' No. 1 Hawkins.

Miller County—Buzzard Bluff Oil Co. set 12-inch at 120 feet, drilling at 400 feet in No. 1 Munn, Section 22-14-26, 15 miles northeast of Texarkana.

Humble Oil & Refining Co. set 10-inch at 80 feet in No. 1 Edwards, trustee, Section 26-17-28, 9 miles west of Fouke.

Lenze and others have derrick up for No. 1 Dale, Section 25-15-26, 16 miles east of Texarkana.

Nevada County—Magnolia Petroleum Co. is drilling in lime at 3,930 feet in No. 1 B. F. Johnson, Section 3-15-21, 14 miles north of Magnolia.

Smitherman McDonald has derrick up for No. 1 C. W. Waters, Section 1-14-21, about half way between Prescott and Magnolia.

CANADIAN FIELDS

(Continued from Page 44)

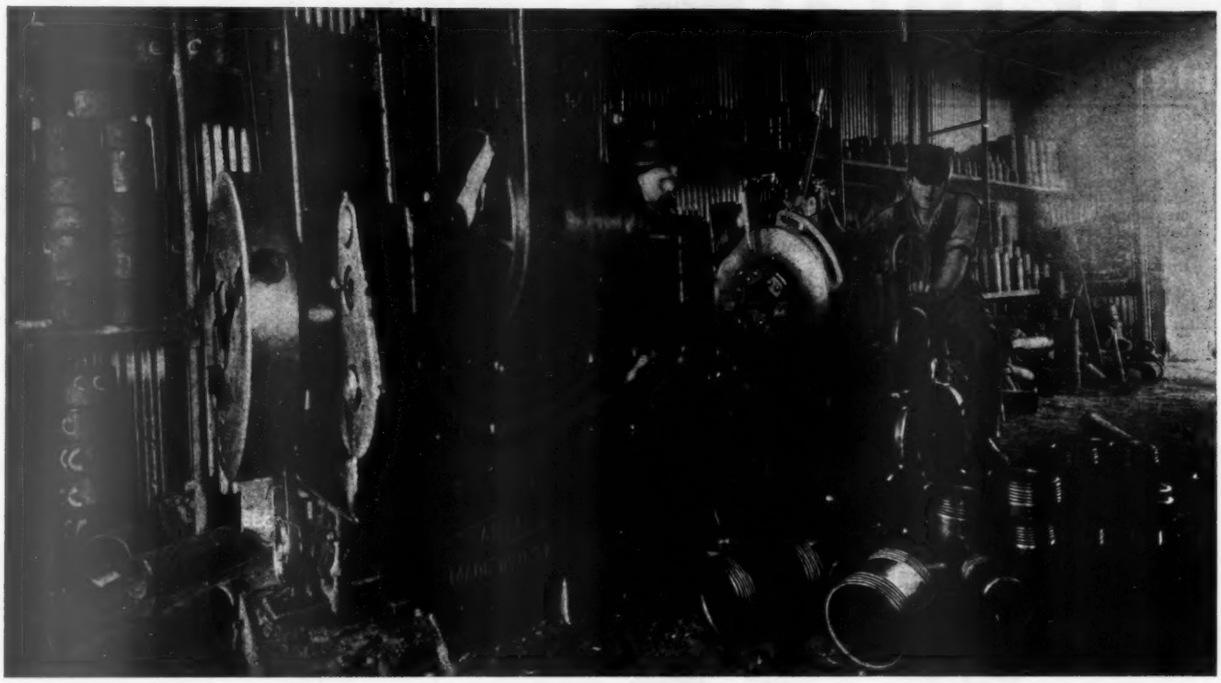
off the trickle of oil, when they will be able to make faster time.

In the northern foothills, west of Edmonton, Imperial Oil Ltd.'s No. 2 Coalspur is reported at 3,985 feet and fishing, an attempt being now made to drill past the lost tools. In the southern foothills west of Nanton, the Imperial Oil, Ltd., Rice Creek test has been closed down for the winter with the 8-inch casing set at 4,025 feet. West of Calgary, another foothills test to be known as No. 1 Bow River, has been located on L. S. D. 15, Section 12-25-5w5, in the Jumping Pound district, and is being rigged up. This test may drill through the winter.

In the border field, Urban Oils, Ltd., is reported down 2,700 feet with its No. 1 Moodie test, Section 4-1-15w4. This test reports good showings of oil and gas, but owing to an intrusion of water it has not yet been determined what the sand is worth from a commercial point of view. The 6-inch casing is being cemented in an effort to shut off the water; then this is finished, the sand will be tested.

In the Medicine Hat Field, No. 1 Roth, deep test, is reported to have struck a heavy gas flow at 2,845 feet depth. This represents the discovery in the Medicine Hat Field of a new gas sand at a horizon lower than the Bow Island sand, which in the No. 1 Roth was unproductive. Between the two

"It's a Peach of a Thread"



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horizons water was encountered, but was shut off. The exact production of the No. 1 Roth from the deep sand has not yet been determined.

Near Warner, Alta., a test for water on the Lynn Tenney farm has encountered shallow gas in fair quantities at 160 feet deep.

In the Ontario fields, Medina Natural Gas Co. drilling in the Courtland Field, Norfolk County, has finished No. 3 well with an estimated production of 208,000 feet a day. The Dominion Natural Gas Co. has finished a dry hole in its latest test.

SOUTHWEST TEXAS

(Continued from Page 44)

be made on the casing there is a strong belief it will make a well.

Mirando District

Clint Chenault, on Survey 681 in the Carolina-Texas district in Webb County, where big gassers have been brought in making wet gas carrying around .41 of a gallon of gasoline to the 1,000 feet and where some slight showings of oil have been had, has cored a sand at around 2,000 feet, the regular gas sand depth, and is reported to have a good saturation of oil. He is setting casing and will soon make a test. The Chenault well is in the southwest corner of the southeast quarter of Survey 681.

In the southeast corner of Survey 682, which is across a 160-acre tract to the west and a little north of Chenault, Snowden - McSweeney at around 2,600 feet are also setting casing and getting ready to test. They are also in a good sand that is probably gas.

Bee County

Seagraves & Moody are pulling the liner in No. 1 Welder in Bee County, which they took over recently from R. E. Clark and others. Depth is 2,651 feet. They will try and shut off the water and make a new test, and, failing to make a well, will drill to 3,500 feet.

Bexar County

Utah Texas Oil Co.'s No. 1 Ivan Vick, in southern Bexar County, is on a rock at 573 feet and expecting some shallow oil soon, which will be developed if in sufficient volume. Otherwise the well will continue to the Edwards, which is the primary object of the test.

Caldwell County

Gulf Production Co. has abandoned No. 1 J. A. Magee at 2,223 feet. It topped the Austin chalk at 2,208 feet. It is located a few miles southeast of the town of Lockhart in Caldwell. United North & South, which drilled No. 1 Callahan some time ago in Caldwell about 2 miles south of the Gulf's No. 1 Magee, has made a location for the No. 2 Callahan in that territory. No. 1 is producing from the Austin chalk and is the only well in that territory. North & South will seek to develop another field.

Edwards County

X. K. Stout's No. 1 Peterson, in Edwards County, has spudded in and drilled about 100 feet and shut down until after the holidays. It had some difficulty in completing a water well. A bed of kaolin through which the water well was drilled set around the drill pipe like cement, and the first well had to be abandoned.

MEXICAN FIELDS

(Continued from Page 42)

Co.'s No. 3 Flores is fishing for a bit in gray lime at 1,840 feet; its No. 5, same, is rigging rotary; its No. 9 Zuniga is in gray and brown lime at 2,100 feet; its No. 15 Lopez cemented 8-inch at 1,257 feet in gray lime. National Oil Co.'s No. 14 Chijoles is in gray lime at 2,065 feet; its No. 19 is in the same formation at 2,110 feet; its No. 39 has a fishing job at 2,080 feet, with considerable oil in the hole. Tampascos Oil Co.'s No. 11 Robles is in gray lime at 2,000 feet. The Texas Co.'s No. 5 Marques (Isleta) is in blue shale at 200 feet. Transcontinental Petroleum Co.'s No. 8 Piedras is spudded; its No. 3 Peralta is in shale at 460 feet. Williamson's No. 1 Perez (Tampuche) is in hard gray shale around 1,100 feet.

In the Cacalilao sector of the northern fields operations follow: La Corona Petroleum Co.'s No. 175, Lot 4, cemented 8-inch in gray lime at 1,190 feet; No. 176 is rigging. International Petroleum Co.'s operations in Lot 5: No. 240 is showing 100 bbls. at 1,857 feet, San Felipe lime; No. 245, cemented 8-inch in the San Felipe at 1,205 feet; No. 246 is in gray lime at 1,920 feet; No. 247 is in the same formation at 1,935 feet; No. 252 is in the San Felipe at 1,338 feet; No. 253 is in blue shale at 1,115 feet; No. 254 is in gray lime at 1,525 feet; No. 255 is in the same formation at 1,980 feet; No. 256 is testing cemented 8-inch at 1,200 feet; No. 258 has tested cemented 8-inch at 1,210 feet; No. 259 cemented 8-inch at 1,202 feet in the San Felipe; Nos. 260 and 261 are each in blue shale at 860 and 607 feet respectively. Mexican Petroleum Co.'s No. 20, Lot 1 Cacalilao, is in gray lime at 2,090 feet. Transcontinental Petroleum Co.'s operations in Lot 4: Nos. 153 and 206 each cemented 8-inch in the San Felipe at 1,200 feet respectively, and No. 214 has done the same at the same depth; No. 232 is in lime at 2,200 feet; No. 234 is in gray lime at 1,750 feet; Nos. 236 and 237 each cemented 8-inch in the San Felipe at 1,200 feet; No. 239 is in lime at 2,120 feet. And in the Paciencia, just north of Cacalilao, Transcontinetal's No. 47 is in gray lime at 1,540 feet; No. 55 is fishing for a few joints of 6-inch at 2,005 feet; and No. 56 is rigging.

South Fields

In the south fields, Huasteca Petroleum Co.'s No. 30-A Cerro Azul is in gray shale at 1,630 feet; its No. 68-A is 550 feet in the same formation; its No. 70 is in brown shale at 1,761 feet. In Tierra Blanca its No. 48 is in gray shale at 1,730 feet; its No. 54 is in shale and shells at 1,772 feet; its No. 57 is in gray shale at 1,925 feet; and up in Chinampa, its No. 15, Lot 158, is in a sandy shale at 1,325 feet. Agwi Companies', (Atlantic Gulf Oil Corp.) No. 16 Tamiahua is drilling in shale at 1,115 feet. Cortez Oil Corp.'s No. 6, Lot 148 Amatlan is running 10-inch in a hard gray shale at 1,185 feet. International Petroleum Co.'s No. 32 Toteco is running 8-inch at 1,835 feet in lime; and its No. 7 Agua Nacida, south of the Tuxpam River, is in hard shale at 4,110 feet. Mexican Eagle Oil Co.'s No. 46, Lot 138 Amatlan, is in a hard rock at 2,241 feet; its No. 28 Cerro Veijo, is in a gray shale at 1,800 feet; its No. 1, Lot 2 Escobal, near Furbero, is fishing tools in shale and shell at 2,924 feet. Penn Mex Fuel Co.'s No. 3 La Pita is in lime shells at 3,365 feet, too deep for much hope, but as this is a distinctive wildcat it is being observed with interest. Transcontinental Petroleum Co.'s No. 1, Lot 16 Zacamixtle, has shut down account rain at 2,220 feet, San Felipe lime; its No. 7, Lot 17, same, tested cementation of 8-inch at 2,188 feet in the San Felipe lime, and is due to finish in a few days.

Ebano

In the Ebano sector of the northern fields, Mexican Petroleum operations follow: In Chapacao: No. 41 cemented 8-inch in gray lime at 1,266 feet; No. 44 is fishing at 1,635 feet; No. 47 is in gray lime at 1,615 feet; No. 51 cemented 8-inch in the same formation at 1,163 feet. In its Chijol, No. 35 is in brown lime and black flint at 2,166 feet; No. 41 is in gray lime at 1,490 feet; its No. 1 La Raya is in gray lime at 1,300 feet; in La Dicha it has three tests rigging, and its No. 66 there cemented 8-inch in blue shale and shells at 1,094 feet; in La Pex its No. 11 cemented 8-inch in gray lime at 1,340 feet; in the Midway its No. 2 is in gray lime at 1,180 feet; No. 6 is in gray shale at 945 feet, and No. 8 Mendez is in hard gray lime at 2,165 feet.

Northern Miscellany

In the general run of the northern fields the following can be observed: American International Fuel Co.'s No. 21 Los Esteros is in sticky shale at 1,354 feet; its No. 24 is in gray and brown lime at 1,775 feet.

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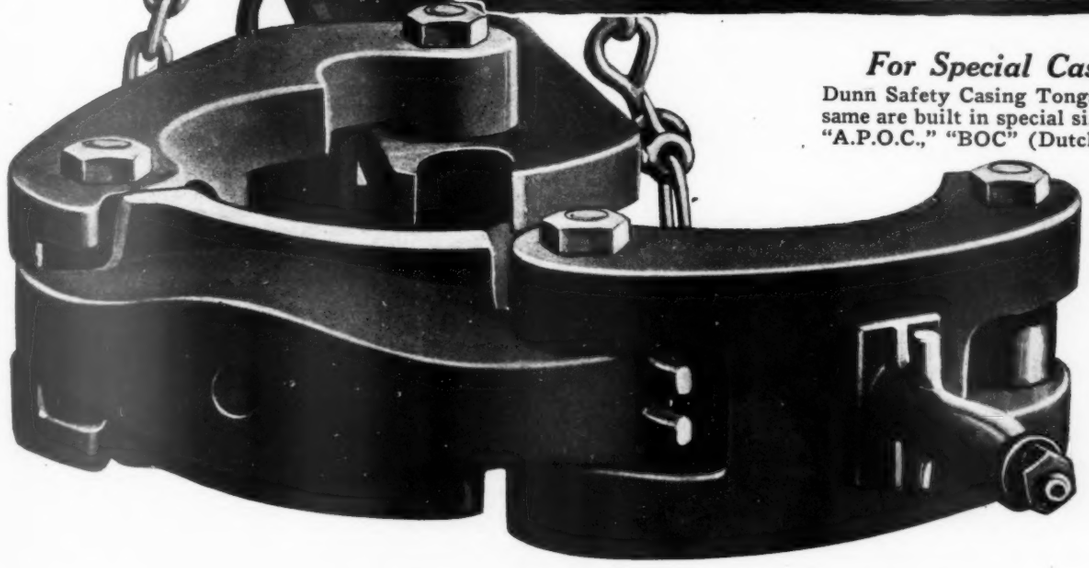

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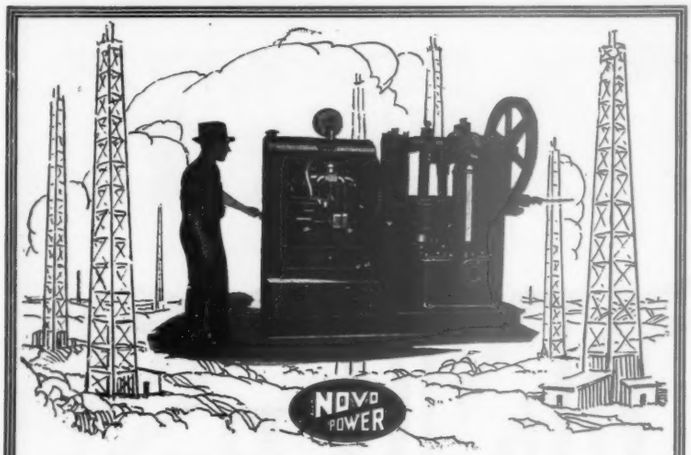

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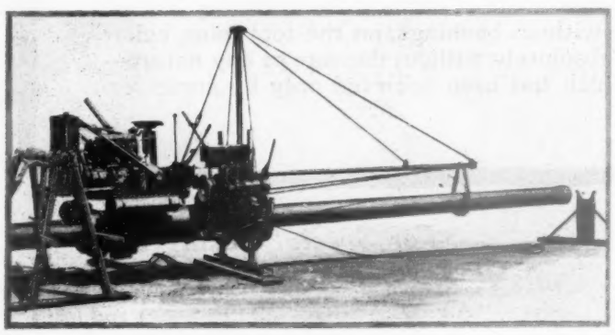

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Co. is back in Lot 6 rigging Nos. 18 and 19. Transcontinental Petroleum Co.'s No. 24, same lot, cemented 8-inch in the San Felipe at 1,150 feet.

Mexican Fuel Oil Co. (Pierce), in the Topila, is 605 feet in shale for its No. 20 Santa Fe.

In the Caracol, Venable and others have drilled No. 30 to 2,120 feet in the San Felipe, and is drilling on No. 31 at 2,260 feet in the same formation.

National Lines, in its Chapacao right of way has the following: Its No. 25 is in the Tamasopa at 2,190 feet; No. 26 is in gray shale at 915 feet; No. 28 is a derrick; No. 29 cemented 8-inch in gray lime at 1,200 feet. And up on the Federal zone of the Panuco River, west of Panuco, it cemented 8-inch for No. 30 Limon at 1,468 feet, and is spudding No. 31.

GULF COAST

(Continued from Page 42)

feet; No. 26 is a derrick; No. 1 Barber is drilling around 4,640 feet. The Kishi Development Co.'s No. 7 McGuire is drilling around 4,700 feet. The Rycade Oil Corp.'s No. 13 State "B" is drilling around 4,600 feet; No. 14 is drilling around 4,450 feet; No. 4 State "E" is drilling around 4,600 feet. The Sun Oil Co.'s No. 1 Johnson and others is drilling around 4,800 feet; No. 3 Belile is drilling around 4,875 feet. The Tillery Oil Co.'s No. 2 State is flowing 150 bbls., 9C per cent water, at 4,650 feet. The Gulf Production Co.'s No. 20 Lee Hager fee is a derrick; No. 8 is drilling around 1,350 feet; No. 8 Kishi-Lang "B" is rigging up; No. 2 is rigging up to deepen; No. 1 Chesson "A" is drilling deeper at 3,000 feet.

Humble Pool

In the Humble Pool, Sutherland and others has a location for No. 2 on the north side. The Texas Co. is rigging No. 1 fee as an offset on the east and No. 2 on the south. The Sun Oil Co.'s No. 1 Bender, on the west side, is drilling around 3,100 feet.

At Spindletop, the Yount-Lee Oil Co.'s No. 2 McFaddin, on the southeast side, is drilling around 1,900 feet and Flynn's No. 1 Gladys on the southwest side is below 1,400 feet. The Lillian Oil Co.'s No. 2 Terrell is drilling at 910 feet. The Baker Oil Co.'s No. 14 Trembly is at 735 feet. A derrick is standing for Yount-Lee Oil Co.'s No. 2 Gladys.

In the Goose Creek Pool, the Humble Oil & Refining Co. is deepening Nos. 1 Smith at 4,235 feet and 64 Smith at 4,300 feet. No. 66 Smith is drilling around 1,345 feet. No. 30 Peninsula is around 4,300 feet. The Gulf Production Co.'s No. 32 Beaumont is drilling below 2,345 feet. No. 19 Galliard is around 4,350 feet and No. 11 Chapman-Bryan at 2,875 feet. No. 10-A Wright is drilling at 2,235 feet. No. 12 Galliard fee is rigging to drill deeper.

The Sun Oil Co. has a derrick standing for No. 15 Bartlett Smith and the Powell Oil Co.'s No. 6 Bryan is drilling around 4,510 feet.

The Republic Production Co.'s No. 24 Dolbear at Hull is rigging up to work over. No. 36 is drilling around 750 feet; No. 68 is drilling around 2,275 feet. The Humble Oil & Refining Co.'s No. 19 Guedry is drilling around 3,010 feet; No. 4 Merchant is drilling around 4,175 feet. The Mecom Oil Co.'s No. 8 Taylor is drilling around 4,180 feet. The Yount-Lee Oil Co.'s No. 12 Merchant is drilling around 2,250 feet. The Higgins Oil & Fuel Co.'s No. 5 Taylor is drilling around 4,125 feet. The Sun Oil Co.'s No. 8 Carr is drilling around 1,216 feet. The Gulf Production Co.'s No. 60 Phoenix Development, is drilling around 3,125 feet; No. 61 is drilling around 2,840 feet; No. 62 is drilling around 2,200 feet; No. 63 is drilling around 1,820 feet; No. 21 Morris-Phillips, is drilling around 1,450 feet; No. 15 J. C. Baldwin is drilling around 1,050 feet.

South Louisiana Pools

At Lockport the Vacuum-Gulf's No. 5 Miller is drilling around 4,400 feet; No. 6 is rigging up; No. 2 Farquahar is drilling around 3,375 feet; No. 1 Freiberg and Wolf, is drilling around 4,362 feet; No. 2 Bordages is building derrick. The Marland Oil Co.'s No. 1 Phoenix is drilling around 5,565 feet.

The Texas Co.'s No. 1 A. Gray at Vinton is making new hole at 3,250 feet; No. 1 C. Gray is drilling around 1,880 feet. The Vinton Petroleum Co.'s No. 5 Gray is rigging up. The Edgerly Petroleum Co.'s No. 8 Vincent is drilling around 2,975 feet. Marrs McLean's No. 8 Gray had the casing collapse at 1,675 feet. The Gulf Refining Co.'s No. 38 Star Vincent is drilling around 2,720 feet; No. 48 G. and N. G. is drilling around 2,345 feet.

In the Jennings Field the Gulf Refining Co.'s No. 38 Jennings-Clement is rigging up. The Texas Co.'s No. 103 Latrielle is drilling around 1,840 feet. F. I. Getty's No. 2 Clement is drilling around 2,810 feet.

Miscellaneous Drilling

Most of the wildcats shut down for the holidays and very little change is noted in the status of those tests from the depths reported last week.

In the Edgerly Pool, (Louisiana), the Gulf Refining Co. is rigging No. 40 Bright-Penn and the Etropal Oil Co. has started No. 3 Regan in Acadia Parish. The Yount-Lee Oil Co. has started No. 9 Ervine in Jeff Davis Parish.

The Gulf Production abandoned No. 4 Thomas, the deep test drilling off the Fannette Dome, in Jefferson County (Texas) and is rigging No. 5 Thomas.

In the Refugio County gas district, the Houston Oil Co. started No. 4 Rooke and No. 1 Ross.

The Gulf Refining Co. abandoned No. 1 Lutcher-Moore on the new dome south of Stark, Calcasieu Parish, in gyp, at 1,279 feet. The Standard Oil Co. of Louisiana's No. 1 Industrial Lumber Co. there is tested sulphur water at 1,283 feet.

NEW MEXICO FIELDS

(Continued from Page 40)

Oil & Refining Co.'s No. 1 Bookman, Section 4-18-28, drilling below 2,300 feet: Empire Gas & Fuel Co., Section 31-24-27, drilling below 500 feet; Flynn, Welch & Yates' No. 30, Section 21-18-28, location made; No. 31, Section 21-18-28, on production; No. 33, Section 3-18-28, setting 8-inch casing at 500 feet; No. 35, Section 29-18-28, drilling below 2,000 feet; No. 37, Section 17-18-28, drilling at 2,040 feet; No. 38, Section 3-18-28, location made; Frontier Petroleum Co.'s McQuigg Brothers lease, No. 5, Section 4-18-28, cleaning out after shot; Hope Development Co.'s No. 1 Fite, Section 4-18-28, setting casing; Hassenfuse, Donley & Compton's No. 1, Section 16-18-28, rigging up; Jackson No. 1, SE of Section 30,15-29, validated 500-foot test; Lane and others, Section 22-16-28, drilling below 3,100 feet; Levers-Carper's No. 1, Section 3-18-28, cleaning out after shot; Levers-Carper's No. 2, same section, drilling below 2,300 feet; Mesa Oil Co.'s No. 1, Section 4-19-28, preparing to resume drilling at 2,547 feet and will make a 3,000-foot test; Maljamar Oil & Gas Corp.'s No. 14, Section 28-18-28, rigging up: No. 15, rigging up; McFrederick-Eppenauer No. 1, Section 15-19-25, drilling below 1,725 feet; Ohio Oil Co.'s No. 1 Tracy permit, Section 34-21-26, drilling at 5,180 feet; No. 6, Toomie Allen lease, Section 28-18-28, pulling tubing to drill deeper; No. 6 New State lease, Section 4-18-28, on production; No. 1 Keiser, Section 16-18-28, drilling at 2,065 feet; No. 4 C. J. W. lease, Section 17-18-28, fishing for tools; Pueblo Oil Co.'s No. 3, Section 4-18-28, drilling in to 12 feet oil sand at 2,310 feet; No. 4, same section, cleaning out after shot; Snowden & McSweeney's No. 1 on McNutt permit, Section 4-21-30, no report; Snowden & McSweeney's No. 2, Section 32-18-28, completed some time ago, will drill deeper to Toomie Allen pay; The Texas Co.'s No. 4, Section 5-18-28, drilling below 2,400 feet; Twin Lakes' No. 6, Section 28-18-28, drilling deeper at 2,600 feet, 1,600 feet of oil in the hole; V. K. F. Oil Co.'s No. 6, Section 17-18-28, drilling at 2,500 feet for deep test; Williams Petroleum Co.'s No. 3 in Section 17-18-28,

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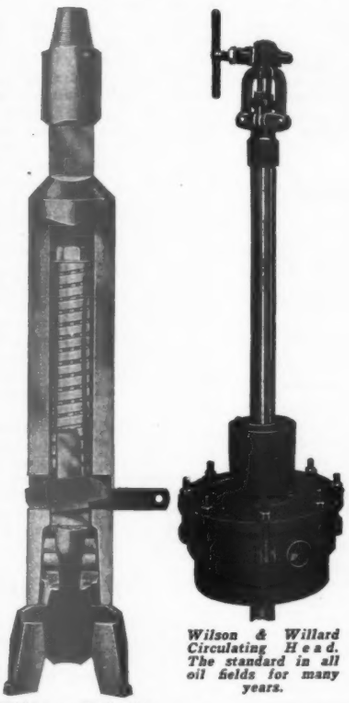

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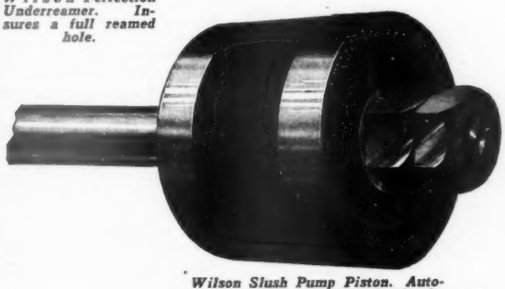

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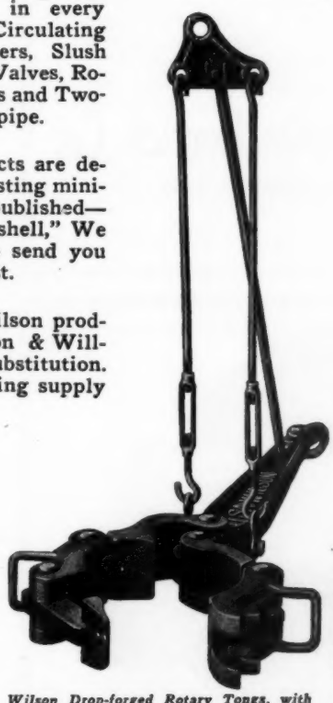

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drilling below 1,700 feet; Williams' No. 4, Section 17-18-28, drilling.

Chaves County

Arkansas Gas & Fuel Co.'s No. 1, Manning Dome, Section 14-15-17, drilling below 2,650 feet; Colorado Gas & Fuel Co., Section 16-8-27, no report; Coontail No. 1, Jarvis and others, Section 28-15-23, preparing to set casing; Dresser's No. 1, Section 24-10-27, no report; Southern Exploration Petroleum Co., Section 15-15-29, drilling; Shafer Oil Co.'s No. 1, Section 25-13-26, drilling below 1,205 feet; White Oil Co.'s No. 1 Franks, Section 25-10-26, drilling below 1,500 feet; New State Petroleum Co., Section 27-10-26, drilling below 1,500 feet; Neal and others' No. 1, Section 25-9-25, no report; Lewis and others, Section 13-8-24, shut down.

Lea County

Covert and others, Section 15-21-33, shut down near 500 feet; Maljamar Oil & Gas Corp.'s No. 1, Government permit, Section 21-17-32, drilling at 600 feet; W. A. Wyatt No. 1, formerly Fenton No. 1, Section 19-16-34, pulling 10-inch casing; Ross No. 1, Section 27-10-32, no report.

OKLAHOMA FIELDS

(Continued from Page 34)

which was shot with 100 quarts. It had the Tucker sand at 1,225-34 feet, a show of gas at 1,253 feet and total depth was 1,313 feet. It was plugged back to 1,275 feet.

Pettet & Ralston and others plugged their No. 1, C SW SW, Section 36-18-13, as dry at 1,653 feet.

T. B. Slick's No. 4, CSL SE SW NE, Section 1-17-14, was estimated good for 25 bbls. from sand at 1,272-87 feet. It was shot with 40 quarts, but bridged.

Suppes and others had a rig up for No. 1 Yargee, NE cor. NW SE, Section 9-19-12, and were moving in tools.

In the Davenport Field of Lincoln County, the Carter Oil Co.'s No. 7 Tuttle, NW cor. NE NE, Section 2-14-5, was a rig. The Texas Co. also had timbers on the ground for No. 6 Baker, SE cor. NW SE, same section. The Prairie Oil & Gas Co. had a rig up for No. 16 Stout, SW cor. NW NW, Section 3-14-5. The Selby Oil & Gas Co. completed its No. 10, C SE NW SE, same section, for 190 bbls. of 46.9 gravity oil in sand at 3,336-3,417 feet. The Phillips Petroleum Co.'s No. 1, NE cor. SE NE, Section 10-14-5, was making 375 bbls. from sand at 3,350-3,401 feet, and No. 2, NW cor. SE NE, was drilling at 110 feet. No. 3, SE cor. NE, was rigging up tools.

The Southwestern Petroleum Co.'s No. 1, NW cor. NE, Section 11-14-5, was drilling at 70 feet. The Phillips Petroleum Co. had a cellar for its No. 1 Sharp, SE cor. NE, Section 35-15-5. The Pure Oil Co.'s No. 4, C SE SW SW, same section, was a completion good for 305 bbls. natural and 350 bbls. following a 30-quart shot in sand at 3,324-81 feet. Gravity of the crude tested 46.8 degrees.

The Prairie Oil & Gas Co. was drilling its No. 1, NE cor. SE, Section 7-15-6, at 1,330 feet.

Payne County

In the Olean district of Payne County, the Olean Petroleum Co.'s No. 1, C NE NE NE, Section 23-19-4, was drilling at 675 feet.

In the Deep Rock Pool, the Amerada Petroleum Corp.'s No. 1, NW cor. SE SE, Section 23-18-3, an old well deepened, had sand at 4,260-77 feet, first oil at 4,263 feet, good for 265 bbls. natural and 30,000,000 feet of gas. Gravity is 42.3 degrees. The Shaffer Oil & Refining Co.'s No. 2, C NE NW SE, Section 23, topped sand at 4,260 feet making 27,000,000 feet of gas.

In northern Lincoln County, the Mid-Kansas Oil & Gas Co. was building a rig for its No. 1, NE cor. NW, Section 33-17-4, corrected location.

Just west of Chandler, M. W. Shriver abandoned his No. 2, C NW NW SW, Section 7-14-4, at 3,962 feet.

In the northern part of the Cromwell Field, Seminole County, the Carter Oil Co. and others were building a rig for their No. 8 Baker, C NW NE NW, Section 33-11-8.

In southern Okfuskee County, the Mid-Continent Petroleum Corp. was building a rig for its No. 1, C NE NW NW, Section 21-10-9.

In Seminole County, The Texas Co. abandoned its No. 1, C NE NE SW, Section 15-8-7, as dry at 4,404 feet. In the Wewoka Field, Lewis Clark's No. 2-A, C SW SE SW, Section 33-8-8, was also plugged as a failure at 3,260 feet.

In the Yeager district of Hughes County, the McMan Oil & Gas Co. abandoned the location for its No. 1, C SE SE NW, Section 18-8-10. The Mid-Kansas Oil & Gas Co. abandoned its No. 3, C SE NW NE, Section 4-9-11, as dry at 2,960 feet. The Tidal Oil Co.'s No. 4, C NE SE NE, same section, topped the sand at 2,822 feet and at total depth of 2,904 feet made 200 bbls. the first 24 hours, 180 bbls. the second, and 80 bbls. the third day.

Northwest of McAlester in Pittsburgh County, Deaner and others abandoned their No. 1, C SE SW NW, Section 24-7-13, as dry at 4,307 feet.

North of Ada in Pontotoc County, Bowles & Smith were drilling their No. 1, C NW NW SE, Section 34-5-6, at 1,251 feet.

Jack Lloyd and associates had a rig on the ground for their No. 1, C NW NW NE, Section 1-3-6, just southeast of Ada. The same interests also had machines up for No. 1 Frick, C NE SE NW, Section 6-3-7, and for No. 1 Hughes, C SE NE NW, same section.

In northern Oklahoma County, J. V. Bailey staked a location for No. 1 C SW SW NE, Section 7-14-3w. This well is to go 4,300 feet, according to the contract.

North of El Reno in Canadian County, A. D. Spears spudded and shut down his No. 1, SE cor. NW, Section 9-14-6w.

Southeast of Lawton in Comanche County, the Magnolia Petroleum Co. was rigging up standard tools for its No. 1 School Land, C NE NE NE, Section 36-2-10w.

KANSAS FIELDS

(Continued from Page 34)

in its No. 1, C NE NE NE, Section 16-34-5.

Lyon County

Considerable new work was under way in southwestern Lyon County. The Super-Six Oil Co. had a rig on the ground for its No. 2 Rossalion, C S half SE, Section 24-21-10. The Transcontinental Oil Co. also had a rig building for No. 1 James, C SW SW SE, Section 30-21-10.

In the next township north, the McMan Oil & Gas Co. was rigging up No. 1, SW cor. Section 16-20-10.

The Transcontinental Oil Co.'s No. 1, C SE SE SW, Section 30-21-10, was completed for 20 bbls. of oil and an equal quantity of water following a 120-quart shot in sand at 2,182-97 feet. Loy Chaney spudded No. 1, C NW NW NE, Section 17-21-10.

Swartz abandoned his No. 1, C NW NW NW, Section 36-21-11, as dry at 2,020 feet.

East of the Madison Pool, the Phillips Petroleum Co. completed its No. 2, C SW NW SW, Section 33-21-12, was completed for 50 bbls. of 38 gravity crude after a 110-quart shot in sand at 1,885-95 feet. Total depth was 1,924 feet.

A wildcat in the next township east was drilling at 400 feet. It is the Fisher Oil Co.'s No. 1, C SW SW NE, Section 9-21-13.

Greenwood County

In the Scott Pool of the Little Golden Lane, Greenwood County, the Mission Oil Co. spudded its No. 6, C SE SW SW, Section 19-23-9. The Phillips Petroleum Co. shot its No. 4, C SW NE SW, same section, with 110 quarts in sand at 2,583-2,620 feet, making 175 bbls. of 42 gravity oil. Same concern was drilling its No. 2, C NW NE SE, same section, at 440 feet, and the White Eagle Oil & Refining Co.'s No. 5, C NE NW SE, same section, was drilling at 400 feet. The Empire Gas & Fuel Co.

completed its No. 1, C SE SE NW, Section 19-23-9, for 150 bbls. after shooting it with 80 quarts in sand at 2,558-70 feet.

On the west side of the township line in the Scott Pool, the Empire Gas & Fuel Co. was drilling its No. 8, C SW SW SE, Section 24-23-8, at 485 feet. The Mission Oil Co.'s No. 4, C NE NE NW, Section 25-23-8, was also drilling at 120 feet. The same company's No. 3, C NE SE NW, Section 25, was good for 100 bbls. after a 40-quart shot in sand at 2,549-96 feet. The pay sand was found at 2,569-76 feet. Same concern's No. 2, C SW SE NW, same section, was a 200-bbl. well in sand at 2,510-30 feet, following a shot of 50 quarts. Greenland, Hays & Roberts were rigging up their No. 10 Scott, SW cor. NW NE, same section.

East of the Teeter Pool, Murphy was drilling at 410 feet in his No. 1, C NW NW NW, Section 14-23-9.

In the DeMalorie Pool district, the Phillips Petroleum Co.'s No. 5, C NW SW SW, Section 12-22-10, was drilling at 660 feet. Davis and associates had a rig up for their No. 9 DeMalorie, C SW NE SE, same section.

In the Browning Pool, the Skelly Oil Co. spudded its No. 1-A, C SW SW SE, Section 20-22-10. The Sinclair Oil & Gas Co. completed its No. 31, C NW SE SW, Section 20, for 200 bbls. after shots of 10 and 20 quarts in sand at 2,257-2,356 feet. Same company's No. 30, C SW NE SW, same section, was also a 200-bbl. producer after 10 and 20-quart shots in sand at 2,272-2,340 feet. No. 29, CSL SE SW, same section, was another well good for the same amount of oil although shot with 160 quarts in sand at 2,253-2,341 feet.

In Section 29-22-10, east of the Nathan Pool, Titus was drilling at 500 feet in his No. 17, C NE NE NW.

Other Greenwood Operations

In the Thrall-Burkett vicinity, the Mission Oil Co. spudded its No. 4-B, C NE, Section 27-23-10. The Mid-Kansas Oil & Gas Co. was drilling at 450 feet in its No. 33, C W half SW SW, Section 31-23-10.

Northeast of the town of Madison, Simons and others spudded their No. 1, C NW NE NW, Section 4-22-12.

In the northwesterly direction of the Seeley Pool, the Tidal Oil Co. spudded its No. 1, C NE NE SE, Section 30-22-11. The Phillips Petroleum Co. was drilling at 615 feet in its No. 5, C NW SE NE, same section, and at 300 feet in its No. 3, C SW NW NE, same section.

In the Harris Pool, the Empire Gas & Fuel Co.'s No. 28, C SE SW SE, Section 19-22-11, was drilling at 350 feet.

In the Fromm Pool, the Empire Gas & Fuel Co.'s No. 10, C SE SE SE, Section 11-22-11, was completed for 140 bbls. of 41.5 gravity oil after a shot of 120 quarts in sand at 1,797-1,856 feet. Same concern's No. 5 Killeson, C SW NW NW, Section 14-22-11, was drilling at 530 feet.

In the north end of the old Sallyards Pool, the Mid-Kansas Oil & Gas Co.'s No. 4, CNL NE SE NE, Section 19-25-9, was spudded. In the next township west, Roth & Faurot were rigging up their No. 8 Burkett, C N half SW, Section 12-25-8.

Southwest of the Scott Pool, the Phillips Petroleum Co. is trying to pick up the trend in its No. 1, C NW NW NE, Section 2-24-8.

Southeast of the Polhamus Pool, the National Refining Co.'s No. 1, SE cor. SW SW, Section 11-25-9 (corrected location), was spudded.

East of Eureka, Roth & Faurot abandoned their No. 1, NW cor. SW SW, Section 36-25-11, as dry at 605 feet.

The Prairie Oil & Gas Co. had a machine up for its No. 3 Blackwell, C NE NW SE, Section 16-24-13.

In the Beaumont Field, the Empire Gas & Fuel Co. spudded its No. 2 Lewis, NW cor. NE NW, Section 24-27-8.

Southeast of the Sallyards Pool, Huff & Roth spudded their No. 1, CNL NW NW NW, Section 20-26-9. The White Oil Co. was rigging up its No. 1 Life, C SW NW NE, Section 13-26-9.

In Other Counties

In southeastern Chase County, the Selby Oil & Gas Co. spudded its No. 6, C SE NW SE, Section 35-22-9.

In Butler County, Joe Liggett had a rig up for his No. 1 White, C NW NW SE, Section 22-25-7, a wildcat.

In the old El Dorado Field, the Empire Gas & Fuel Co. abandoned its No. 33, C NW SW SW, Section 20-25-5, as dry at 2,611 feet. Coulter and others completed their No. 33, C NE SE SE, Section 19-25-5, for 25 bbls. of oil and 3 bbls. of water in chat at 2,471-74 feet.

East of the old Sluss Pool about 3 miles, the Lewis Oil Co. was drilling its No. 1, C SW SW NE, Section 32-26-6, at 1,050 feet.

In the Young district, the Young Oil Co. had a rig up for its No. 4 Young, C SE SW NW, Section 27-26-7. W. Hoyt spudded his No. 1, C SW SW NW, Section 32-26-7.

In the First Break Pool north of the Leon Field, the Richmond Drilling Co. spudded its No. 1, SW cor. SE, Section 8-27-6.

In the next township east, the Amerada Petroleum Corp.'s No. 1, C SE NW SE, Section 22-27-7, was flowing 160 bbls. from sand at 2,670-93 feet. The Empire Gas & Fuel Co. was spudding its No. 1, C NW NW NE, Section 27-27-7, at 190 feet.

On the south end of the Sluss-Smuck Pool, Travis had a rig up for a twin well, its No. 6 Emerson, C NE NW, Section 11-27-5. Between the Weaver and Leon Pools, Hartman & Skaer abandoned their No. 1, C NW NE SE, Section 25-27-5, as dry at 2,808 feet.

Eddy Farr had a rig in place for No. 1 McCraig, C SW SE SE, Section 13-28-6.

Northwest of the Atlantic Pool, the Marland Oil Co. was drilling its No. 1, C SW NW NE, Section 9-28-7, at 765 feet. The Atlantic Oil Producing Co. was drilling at 450 feet in its No. 2, C NE SE SW, Section 15-28-7.

In the northwestern corner of Elk County, C. E. Roth plugged his No. 1, C NW NW SE, Section 12-29-8, as dry at 2,800 feet. The Empire Gas & Fuel Co. had 800 feet of oil in its No. 4, C SW NE NW, Section 13-29-8, after a 25-quart shot in sand at 2,005-2,225 feet.

In the southeastern corner of Butler County, Roth & Faurot were drilling their No. 1 Hanna, C W half SE, Section 33-29-8, at 1,300 feet.

Northeast of Howard in Elk County, the Theta Oil Co. completed its No. 1 Hawkins, C E half NW SE, Section 34-29-12, for 15,000 feet of gas at 1,711-30 feet.

The Anderson Brothers completed their No. 1-A, CSL SE NE, Section 16-21-9, twin to a dry hole, for 1,250,000 feet of gas in sand at 1,447-74 feet.

The Theta Oil Co. was spudding its No. 4, C SE SW SW, Section 23-31-10. Gillespie was drilling at 200 feet in his No. 1, C SE SE NW, Section 27-31-10, and the Theta Oil Co. was down 500 feet in its No. 4, CSL NE NE NE, same section.

BUSINESS PERMITS GRANTED

AUSTIN, Tex., Dec. 26.—Permit to do business in Texas was filed by Central & Southwest Utilities Co., Dover, Del., capital stock 1,200,000 shares, with $24,465,000 paid in.

Samuel Insull, president of the Commonwealth Edison Co., Martin J. Insull, F. W. Insull, G. W. Fry and J. C. Kennedy, are directors. Mr. Kennedy, who is president of the Texas Central Power Co., San Antonio, is in charge of the Texas business, with principal offices at San Antonio.

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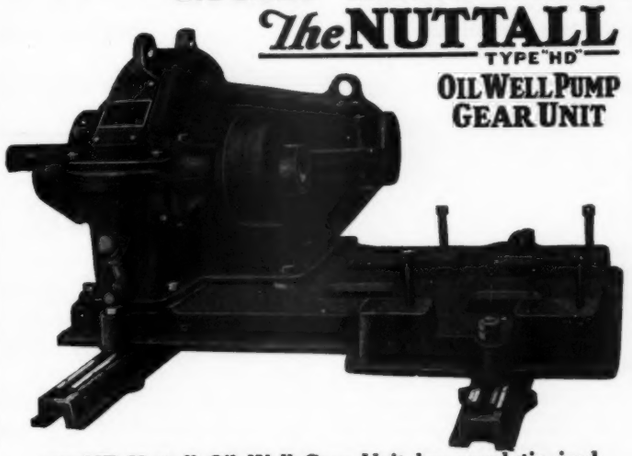

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SOUTHEASTERN NEW MEXICO—Thirty thousand acres state and fee land oil leases. Almost solid block. On railroad and now drilling on north side of block. Sell right. P. O. Box 61, Lake Arthur, N. Mex.

TEXAS PANHANDLE RANCH for sale in fee, near oil and gas wells, cheaper than leases. Brokers don't answer. John P. Marrs, Wichita Falls, Tex.

FOR SALE—200 barrels settled production, 36 degrees gravity. Youngest well more than three years old. Address Room 607 Continental Bldg., telephone Maple 4041, Oklahoma City, Okla.

OIL AND GAS LEASES
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30,000 acres Crockett County, large and small blocks; adjoining big companies; scattered wildcat. Also close-in adjoining World well block.

20,000 acres 10-year leases; low rentals; Terrell County, getting good play. Watch this county! Prices right.

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5,000 acres Irion County. Ten-year lease; watch the new work here.

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Write for prices and maps. Will allow time for geological inspection.

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W. T. Waggoner Bldg. Ft Worth, Tex.
Reference: Mercantile Agencies.

FOR SALE—Oil and gas leases, settled production and leases partly developed. W. P. Harley, Bowling Green, Ky.

WILL GIVE deed to 40 acres and lease on balance of 312 acres to any man to drill one well on this land. Mrs. L. M. Roe, Lock box 295, Calico Rock, Ark.

THE ORGANIZATIONS that get the bulk of the oil industry orders are those who are known to the industry and who can combine quality with speedy service. If you had your equipment listed in this section it would receive the same consideration that thousands are giving the good equipment advertised here.

FOR SALE—200 acres in fee simple, with an undivided one-fifth interest in 980 acres, located on the Great Brazil Anticline, near deep drilling well, will accept 20 per cent of purchase price cash, balance, without interest, from oil and gas production. Do you know that Oklahoma's new wealth is over a billion per year? For information write E. L. Cooper, 506-7 Commerce Bldg., Kansas City, Mo.

FOR QUICK drilling contract, 875 acres near Ponca City, Okla. Proven territory. Very advantageous terms to parties who want production. Producer, P. O. Box 1325, Houston, Tex.

FOR SALE ON YOUR OWN BID

We have been holding 2,280 acres of land expecting to develop the territory for oil, which we have been advised by geologists is in the land, and if further proof is necessary we have a letter written by an old line oil company saying their geologists said there was oil under this tract, but we could not accept their offer for leasing So in order to close our partnership we have concluded to sell this land, sale to be subject to a timber deed for timber on this land, and our reserving one-eighth of oil in this tract and the purchaser to pay taxes due and payable in year 1926. We will sell this land to customer offering us the highest price in the next 30 days. This land lies on eastern border of Chicot County, Arkansas, and extends down to Louisiana and is very close to the Louisiana gas and oil field. This land has about 100 acres in cultivation, raises one bale cotton to the acre and 60 bushels of corn and is a fine piece of land and will make someone a big fortune. Go and see this land and write us your best price, which must be cash only.

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A much heavier call is expected in 1926, which will stimulate a demand for good leases and production.

If you want to buy or sell leases, production, or royalties, place an advertisement in this section. Mail it now so that it will be in next week's issue. It doesn't cost much.

The Oil and Gas Journal
Classified Wants Section

LEASES—PRODUCTION

OIL MEN, LISTEN

We need money for further development, we will sell a part of our East Cross Cut lease holdings at a bargain. Address Douglass Land Co., Cleburne, Tex.

37,000 ACRES, now drilling for oil on 10,000 acres, located in active developments; only $6.50 in fee; worth more for lease; many other bargains in Southwest Texas. Ed Willmann, 203 Gunter Bldg., San Antonio, Tex.

HAVE BUYERS for flush or settled production in Oklahoma and North Texas. Vern R. Hartman, P. O. Box 442, Dallas, Texas.

I OUGHT to be able to sell equipment through this section. It must bring good results, because it is filled with Classified Advertisements every week. Guess I'll try it.

NEW MEXICO

Oil leases. We offer choice 40-acre leases in the Cap Rock district in Lea County and south of the Hope Development Co.'s well in Eddy County at $25 per 40-acre lease until January 10. Write for maps and particulars.

NEW MEXICAN EAGLE OIL CO.
Sapulpa, Okla.

FOR SALE—Oil leases and royalties. Write us. Kevin-Sunburst Holding Corp., Box 348, Shelby, Mont.

LEASES FOR SALE or drilling. Webb, Zapata, Jim Hogg Counties. For further information write Olof Johnson, 608 Tower Avenue, Superior, Wis.

NINE surveys, containing 5,120 acres, 10 miles west of Fort Stockton, Pecos County, Texas. Said to be good oil formation. L. S. K., P. O. Box 818, Plainview, Tex.

FOR PANHANDLE oil leases and drilling contracts, write Dr. W. R. German, Canadian, Tex.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

WEST TEXAS Marathon Fold oil leases. Personal investments since 1919. Write for data and maps. Paul Kons, P. O. Box 291, Fort Worth, Tex.

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LEASES—PRODUCTION

LEASE offering extraordinary. Test wells and Tortion balance now operating in search for oil on my two blocks, leases both sides Colorado River near Wharton, Wharton County, Texas. Geologists reports favorable, major companies have bought protection leases. Limited number leases for sale in midst operations. For particulars write, wire or phone, James W. Rich, Oil Operator, 401-2 Bankers Mtg. Building, Houston, Tex.

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WANTED—We want at once 15 miles of four-inch pipe. Quote price, location and condition. Payne Natural Gas Co., Payne, Ohio.

FOR SALE—EQUIPMENT

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FOR SALE—150 miles genuine wrought iron five-inch line pipe, fine condition. Tri-State Pipe Co., Box 282, Tulsa, Okla.

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Two strings of cable tools (practically complete) located in Lost Soldier Field, Wyoming.

Everything in good condition, for complete information write

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WONDERFUL OPPORTUNITY to buy or lease oil refinery. Write 17 Dunn, Great Falls, Mont.

REFINERY FOR SALE

One of the best little 2,500-barrel topping plants, formerly States Refining Co., Grand Prairie. You can buy this plant right, if you buy quick. Write or wire D. C. Lucas, Dallas Development Co., Dallas, Tex.

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GRADUATE CHEMIST with over 11 years' experience as chemist and technical superintendent of petroleum refinery making full line of lubricating oils and greases, desires new connection. Box B-75, The Oil and Gas Journal, Tulsa, Okla.

Through the Classified Wants Section you can interest 25,000 oil men in your product or want. Mail your advertisement now for next week's issue. It doesn't cost much.

WANTED—Connection with oil company in Texas as lease scout. Have been running tools and leasing land for 10 years. Age 37. Box B-88, The Oil and Gas Journal, Tulsa, Okla.

SUPPLY MAN—Six years' experience in field stores and offices of large company, desires connection. Address Box B-85, The Oil and Gas Journal, Tulsa, Okla.

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ATTENTION
REFINERY MANAGERS

Young man with eight years refinery experience desires connection with progressive company. Thoroughly familiar with modern refinery operation and equipment. At present superintendent of 3,500-bbl. refinery, but desire change. Married, reference. Box B-81, The Oil and Gas Journal, Tulsa, Okla.

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ADDRESSES WANTED

ANYONE knowing the whereabouts of Mr. Volney Boshak, age 21, will do a great kindness by notifying his brother, Russel Boshak, at Morsvia, Iowa.

HELP WANTED

WANTED—Foreman or principal assistant to our operating superintendent. Pipe still and cracking equipment for gasoline only. Wages $250 per month. Will pay fare to Toronto. Age not over 45. Strong boss. Box B-86, The Oil and Gas Journal, Tulsa, Okla.

RIG BUILDER or oil field lumberman wanted on strictly profit-sharing basis. We will furnish lumber, rig irons, Ford car and all other stock necessary to do business, but applicant must have enough money to live on three months, must know the rig building business, and must be a hustler. This is a business proposition and job hunters need not apply. Address Box 1164, Shreveport, La.

EXECUTIVE, ENGINEERS, $3,000-$25,000, find our individual, confidential service effective in making new connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Jacob Penn, Incorporated, 305 Broadway, New York City, N. Y.

SCHOOLS

BOARDING SCHOOL FOR GIRLS—Elfindale in the Ozarks, conducted by Sisters of the Visitation, Springfield, Mo. Write for catalog.

WANTED

WANTED—Offsets or close in leases and drilling blocks. Send all data. G. W. Moore, Box 6, Independence, Kans.

WANTED—Marginal contract on gasoline for the year 1926. Contract to be based on the average tank wagon price (Standard of Louisiana) as published in the National Petroleum News. In Nashville, Memphis, Chattanooga and Knoxville, Tenn. Gasoline for the months of January, February, March, April, October, November and December shall grade 58-60 N N or better, the balance of the year we will accept 56-58 450 end point goods. Shipments to start the first week in January and to be at rate of 35 to 40 cars per month. If interested write
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5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
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9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

WANTED—Producing ropalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

WANTED

WANTED DRILLING PROPOSITIONS

Will drill test well on well located acreage with good geology. Submit with full particulars to Steiner Oil Co., 347 Harvey Snider Bldg., Wichita Falls, Tex.

WANTED—Practical man with $25,000 to start $1,000 per day net copper production. A. L. Jones, Brownwood, Tex.

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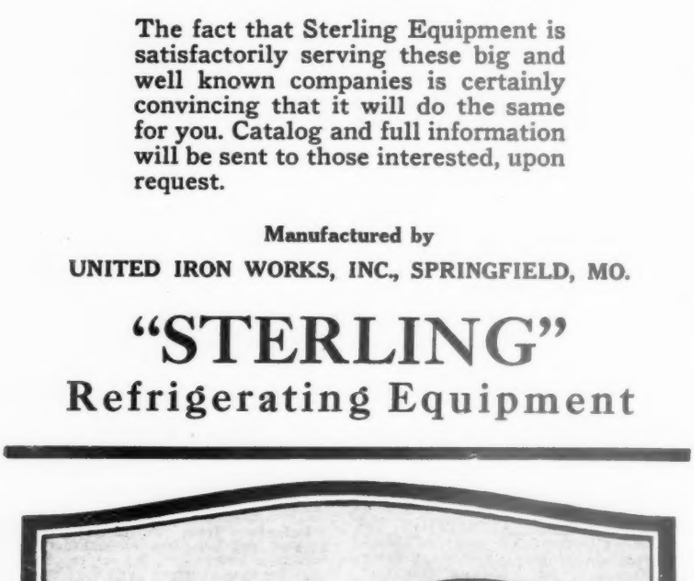
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LARGE TONNAGE AND STEADY PRICES FEATURE OF THE YEAR IN PIPE TRADE

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 28.—Trade in tubular goods, both merchant pipe and oil country goods, has been dull in the past few weeks, as usual at this season. In the past week there has been a slight picking up in buying of merchant pipe by jobbers, evidently because orders could be placed without any danger of the material being delivered before inventory taking.

In general there is no prospect visible at present of any large increase in buying of pipe mill products immediately after the turn of the year. The conventional stocking up for spring trade, in both merchant pipe and oil country goods, seems to be getting out of date, though conditions may change in future so as to bring the practice into its old time vogue again.

In the past couple of years there has been scarcely a time when fairly prompt mill shipment could not be obtained on new orders and specifications, hence there was little occasion to anticipate on that account, and as prices, in general, have not changed since the advance of April 19, 1923, there has been no occasion to stock up against a possible advance in prices.

For several weeks pipe mill operations have been rather steady at say 60 to 65 per cent of capacity. Since about November 1 pipe mills have been replenishing stocks, which are now of moderately fair proportions and as the stockings up need not be carried much farther it would seem there would have to be a considerable increase in buying to bring about any decided increase in pipe mill operations.

The year as a whole has been a very good one for the pipe mills, as they have had a large tonnage and steady prices. Lately there have been a few reports of shading in some districts, but this is not regarded as amounting to anything in respect to the general market situation. The output of pipe mills has probably made a new record in 1925, the previous record having been made in 1923. That year was a very big one in line pipe, but 1925 may have been a bigger one. If so, that was on account of gas lines rather than oil lines. Merchant pipe production was hardly as heavy in 1925 as in 1923, but casing, drill pipe, tubing, etc., seem to have run heavier.

The steel industry as a whole continued up to the day before Christmas at the high operating rate it maintained in November, within 5 per cent or so of the record high rate, measured in terms of steel ingot production. Mills closed the day before Christmas and most of them remained closed to the following Sunday night. There is likely to be a somewhat similar closing in connection with New Years Day. A few finishing mills closed for a week. In general, the year-end or holiday closing has been much lighter than usual, evidencing the existence of fairly good rolling schedules.

It is quite possible the buying movement of the past two or three months, which has now subsided into the present relatively dull market, was somewhat overrated. Mill bookings in the aggregate have been large and far in excess of the shipments, which also have been large. The Steel Corp.'s unfilled tonnage reports have furnished some precise information. Allowance, however, has to be made for special buying, particularly the large rail engagements for 1926 and various first quarter contracts. The regular every-day buying, for prompt shipment or shipment at mill convenience has not in the net greatly exceeded the shipments. In some lines specifications have piled up at the mills, in other lines not. The principal thing about the recent movement, in its augury for the future, was not that it furnished the steel mills much momentum to run in future, but that it betokened a high rate of consumption, since production was very heavy and shipments well received. There could hardly have been any stocking up by buyers such as usually occurs in the early months of the year, or at least has occurred for three years in succession.

Steel prices are steady without any marked advancing tendency.

Keisker et al Sell Simms Half Interest In Discovery Well

EL DORADO, Ark., Dec. 26.—The Simms Oil Co. has acquired a half interest in the No. 1 Dumas of A. M. Keisker and others, in Section 9-17-16, Union County, and 160 acres surrounding the location through a deal closed with Keisker as trustee and Spencer & Rhodes, drilling contractors, according to an announcement from Keisker.

In making the announcement Keisker did not divulge the purchase price but it is understood that the transaction was for cash and that the money involved exceeded $100,000.

According to Keisker the terms of the deal call for all expenses incurred in the operation of the property to be borne by the purchasing company. Three new wells are to be started at once on the 40 acres on which the wildcat is located.

It is understood the Simms company will start at once to place the well on the pump and proceed with the drilling of new holes.

All of the acreage involved in the deal is in Section 9-17-16 and 8-17-16 and none of the other property held by Keisker and Spencer & Rhodes is affected.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended December 19, totaled 1,239,000 bbls., a daily average of 177,000 bbls., compared with 1,262,000 bbls., a daily average of 180,286 bbls. for the week ended December 12, and a daily average of 173,607 bbls. for the four weeks ended December 19.

	Week Ended Dec. 19
At Atlantic Coast Ports—	
Baltimore	250,000
Boston	244,000
New York	184,000
Philadelphia	74,000
Others	277,000
Total	1,029,000
Daily average	147,000
At Gulf Coast Ports—	
Galveston District	18,000
New Orleans and Baton Rouge	93,000
Port Arthur and Sabine District	51,000
Tampa	48,000
Total	210,000
Daily average	30,000
At All United States Ports—	
Total	1,239,000
Daily average	177,000
Daily average 4 weeks ended	173,607

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended December 19 totaled 472,000 bbls., a daily average of 67,429 bbls., against 702,000 bbls., a daily average of 100,286 bbls. for the week ended December 12, and a daily average of 64,929 bbls. for the four weeks ended December 19.

	Week Ended Dec. 19
At Atlantic Coast Ports—	
Baltimore	.....
Boston	.....
New York	245,000
Philadelphia	77,000
Others	80,000
Total	402,000
Daily average	57,429
At Gulf Coast Ports—	
New Orleans and Baton Rouge	.....
Port Arthur and Sabine District	70,000
Total	70,000
Daily average	10,000
Total Atlantic and Gulf Coast ports	472,000
Daily average	67,429
Daily average 4 weeks ended	64,929

FUNDAMENTAL RESEARCH WILL AID INDUSTRY

(Continued from Page 23)

studies of methods of recovery of oil left under the surface under present methods.

The committee of 11 on conservation of the American Petroleum Institute in its report on supply and demand devoted attention to research on production methods and its observations in this respect are possibly pertinent to the program now being worked out by the research committee named to administer Mr. Rockefeller's fund. The report says:

"It is believed that for every barrel of oil produced in this country two or more barrels remain in the ground. A considerable part of this oil can be brought to the surface at a reasonable cost by methods known today, yet, a large part of it is probably not available as a supply through the use of processes now employed.

"It may never be necessary to produce this remaining oil. However, since it exists, and is an assurance to us of an era of production as great as or greater than that through which we will go by flowing and pumping methods, it should be studied. This study cannot be carried on at profit at this time. If we wait until this oil is needed prices will soar beyond all reason before methods are evolved to produce it. In order to eliminate the possibility of this condition arising experiments should be started now and carried on, not with the idea of profit, but for the assurance of being prepared should an emergency requiring such oil arise.

"There are a number of problems relating to the technical phase of oil production which we believe possible of solution, but on which so little scientific and experimental work has been done that they remain a fruitful field for the prosecution of research.

"To date oil companies have not been able to carry on as much of this type of work as is desirable, so that those experiments which have been made have to a large extent been performed by Governmental agencies. Due to the lack of funds, however, these agencies have not been able to prosecute this work with broad enough scope to keep pace with the development of the industry.

"We find oil companies are showing an increased tendency to enter this field of endeavor, and we believe that within a few years practically all companies will have their own research departments. When this develops there will be an enormous duplication of effort in solving those problems which embrace basic scientific principles that are purely mathematical, physical and chemical It is, therefore, highly desirable that some form of cooperation be immediately established among oil companies to make a study of these basic principles, in their application to the practical problems of the industry."

While topics may be suggested as suitable for a program of fundamental research it is recognized that there is danger in attempting to be too specific. This thought, it is understood, is held by the research committee appointed to administer the Rockefeller fund, which committee is now asking for suggestions from the industry as to research subjects and methods of procedure.

Need Trained Personnel

The principal purpose is to enlist the interest of the right type of man in petroleum research. In fact, the development of the trained personnel is stressed above that of the selection of the work itself.

It is pointed out that only a few men have devoted attention to fundamental scientific problems in petroleum, but that upon the work of these few are based many of the chief scientific developments of the industry. The work of Professor Silliman in the early days of the industry laid the foundation for the refining industry. It is still builded upon. The same is true of Dr. Mabery's work on the constituents of petroleum oils, as well as other work.

Dr. Mabery has devoted a lifetime to fundamental research in oil, and the whole industry has profited by his accomplishments. This has been done without special financing and without any material reward accruing to Dr. Mabery. He is now advanced in years, but actively engaged in his chosen work at the Case School of Applied Science.

The Rockefeller donation provides for fellowships and the thought is held that with an incentive of this kind university professors and graduate students will devote more attention to petroleum research. Of the hundreds of men who graduate with doctor's degrees annually, a negligible number have taken up petroleum as original research work for their theses.

With incentive and direction it is believed that petroleum will get the attention it deserves, and that men will be stimulated to devote their life work to abstruse oil problems the solution of which would render signal service to the nation and to civilization generally.

The belief is held that the direction of the interest of this type of man to petroleum is the primary objective of the research program. The type of man and the type of research work being developed by Dr. Robert A. Milliken at the California Institute of Technology is pointed to. Dr. Milliken was acting chairman of the National Research Council during the war. His approach on scientific development is from an economic and patriotic standpoint, and the opportunities offered by petroleum research are unusual in their potentialities for service of this kind.

Prize for Research

Another suggested stimulation for work of the character accomplished by Dr. Mabery is a prize for the most notable contribution to petroleum research. This could be rendered on the basis of research accomplishments typical of the work the industry would like to foster. It could be placed on the plane of the Nobel prize, which may be given for the most notable achievement of the year or which may be based on cumulative work and the results of a lifetime of activity.

In short, the matter of petroleum research is being approached with vision as to its inherent difficulties and as to its tremendous possibilities. Efforts of amateurs to fuss with the practical problems are not wanted, nor are half-baked patents, to quote one who is giving considerable thought to the proposed program; nor is the plan to try to foster amateur technology.

The objective is to attract the equipped scientist and to fully equip the student scientist and to enlist their services in the purely fundamental problems, and to have from them fundamentals on which every company and individual in the industry have to build. Their job would be to run down a fundamental fact.

It is emphasized that stimulation of applied science is not the objective. Such as cracking, treating and still construction are outside the realm, as they are problems now being met and their relation to the industry is as definitely a part of company operation as marketing problems which have grown up in the natural development of the business.

The prime objective is not to get a particular problem solved, but to get present scientists busy and to have a fresh crop coming along which will get busy on the geology, physics and chemistry of petroleum recognizing the field as one worth while from the standpoint of the advance of science and civilization.

If the services of this type of scientist are enlisted it is believed that reliance can be placed on their judgment as to the investigations to be conducted, and that successful results will logically follow.

An attitude advanced as requisite to approaching the working out of a program of scientific research may be stated as follows: "It is axiomatic that a problem well stated is a problem half solved. The trouble with the petroleum industry when it comes to scientific research is that we don't know what our problem is. It is not a question of telling these scientists what to do. Get them interested in us and they will find out themselves."

Results will be available to the entire industry. Thus the applying of the results is purely a competitive matter within the industry. A fundamental fact is established and the entire industry uses it to the best advantage possible. How it is used is entirely up to the individual company, which is left with free play for initiative and originality in applied research.

It is confidently expected that the results of organized fundamental research will provide in a generation or so, or perhaps sooner as the results gradually accrue, a bigger opportunity to do business and a more profitable industry. Whereas there has been room for everyone to do business in the two generations since the birth of the industry largely due to the plentiful supply of oil, there will be room for every one to do a better business in the next generation marked for its scientific advances if the vision of those who see the possibilities of fundamental research proves accurate.

RUBBER MONOPOLY IS CONTRASTED WITH OIL

(Continued from Page 21)

posed on petroleum producing companies in some parts of the British Empire, but there is no general ban on foreigners of the nature alleged. Even where such restrictions are in force American interests are to be found at work—for example, in Canada the Imperial Oil Co., a direct and very powerful subsidiary of the Standard Oil Co., occupies a commanding position, and in Trinidad an American company, the General Asphalt Co. of Philadelphia, controls one of the principal operating companies. While foreigners are excluded from India, there are no restrictive measures in Australia, New Zealand, South Africa or Egypt.

"2. It has been suggested that it is our settled policy to prohibit the sale of British oil companies to aliens. Any regulations of this kind were war measures of a perfectly natural and legitimate kind, and it is quite inaccurate and misleading to refer to them as part of the permanent policy of His Majesty's Government, and as indicating a determination to exclude foreigners from participation in British oil enterprises."

U. S. Could Dictate

Obviously, the United States is in such a natural position with regard to crude oil supplies that it could dictate prices to a large extent if this great industry were under centralized control. In such an event, America could easily get back what it has or may lose in the price of rubber. But the American petroleum industry, unlike rubber abroad, is competitive, unregulated and prices are subject only to the law of supply and demand. For this reason foreign as well as domestic consumers of petroleum products have the best possible guarantee against exploitation in a commodity even more necessary to the civilized world than is rubber.

AFFIRMS PUMP DECISION

AUSTIN, Tex., Dec. 26.—The decision of the Travis County District Court in favor of The Texas Co., Gulf Refining Co. and Producers Refining Co., holding that their lease or loan of filling station equipment with the condition that only their products shall be marketed through the equipment, does not violate the State anti-trust laws, was affirmed by the Third District Court of Appeals today. The anti-trust suits were brought by Former Attorney-General W. A. Keeling.

PUMPER CRUSHED TO DEATH

Caught between the wheel and the block of a pump on the lease of Porter Brothers in Garlock Hollow, Ambrose S. Henry, pumper, was crushed to death. His body was found by fellow workers after he had failed to return to the house for supper.

CALIFORNIA GASOLINE INCREASE A SURPRISE

LOS ANGELES, Calif., Dec. 26.—The announcement by the Standard Oil Co. of California of a 2-cent increase in the price of gasoline in the Los Angeles area came as rather a surprise. The new price at company service stations, effective December 22, is 18½ cents (tax included.) The other major marketing companies quickly met the higher price set by the Standard. This increase reestablishes the price prevailing in Los Angeles before the Pan American Petroleum Co. launched the 2-cent reduction early in September. The relative prices throughout the Pacific Coast are now back on the same basis as existed before the last cut.

The Standard Oil Co. of California did not give out any official reason for the increase, but most marketers are of opinion that several factors are responsible. First of all, crude prices are much higher relatively than refined oil products and, under the old schedule of prices, refiners have had an extremely hard time keeping on the right side of the ledger. The smaller refiners, especially, will welcome the higher gasoline prices. Not only are crude prices relatively high, but during the past few months production of crude in California has fallen off steadily, especially in the case of higher gravity oils containing larger percentages of gasoline. Then, the recent price advances in the East in the face of poor seasonal demand undoubtedly was a contributing factor to an increase in gasoline here. Due to unusually mild weather, the consumption of gasoline around Los Angeles has been better than expected, a condition which also figures in the economic situation bringing about the price advance. It is also pointed out that under the old price level marketing companies considered the large differences in the price of gasoline in the vicinity of Los Angeles and throughout the rest of the Pacific Coast an unhealthy marketing condition. The new price of 18½ cents in Los Angeles remedies this situation.

Along with domestic gasoline prices, the prices of export gasoline were also advanced. As yet there has been no change in the price of engine distillate, but a raise is expected before long, as engine distillate usually moves along with gasoline. Natural gasoline is also up 2 cents, holding the same relation as before with respect to motor gasoline.

KEROSENE ONLY STRONG NORTH TEXAS PRODUCT

FORT WORTH, Tex., Dec. 26.—Kerosene was about the only commodity that showed anything like strength during the week, fuel oil having suffered a serious decline during the past 10 days and gasoline having difficulty holding its own.

Late in the week practically no buyers were reported in the market. U. S. Motor was selling at 9¼ cents with comparatively none moving. A price of 12½ to 12¾ cents prevailed on 64-66 375 end point gasoline but there was very little activity.

There was some action in the kerosene market but refiners and marketers reported they could see no unusual demand and predicted the activity would soon subside, especially with severe cold weather. They attributed it to the fact that refiners have been making very little kerosene while the prime white grade brought 4½ cents.

A little natural gasoline moved during the week around 9½ to 9¾ cents for Grade C, 10½ to 10¾ cents for Grade B, and 11 to 11¼ cents for Grade A.

The gas oil and fuel oil market were extremely quiet. A little gas oil moved at around 3¾ cents. Fuel oil has suffered serious price declines during the past week or two, being off from 25 to 30 cents per barrel. Buyers, refiners say, apparently decided the price was too high and stopped buying. Prices prevailing this week ranged from $1.35 to $1.40 per barrel in the Wichita Falls district.

Oil Issues Advance in Heavy Trading

California Securities Lead in Movement, Pacific Going Up 15 Points. Gulf Oil Corp. Features Independents With New High

By N. O. Fanning

Room 543, No. 30 Church St., New York

NEW YORK, Dec. 28.—Oil securities advanced in heavy trading during the past week led by California Oils. Pacific Oil advanced some 15 points on news of the merger with the Standard of California. Gulf Oil featured the independents, advancing above 98. Galena Signal Oil recovered briskly from the recent low.

Panhandle Merger

Considerable market activity has developed in Panhandle Producing & Refining stock on the New York Stock Exchange, and Gibson Oil Co., on the New York Curb. Both stocks are now selling around 5½, the former having advanced from around 2, and the latter from approximately 1.

Both companies are largely interested in acreage in the Panhandle Field of Texas, especially in Hutchinson County, where each has one or more producing wells.

Activity in the stocks of these concerns is believed in some quarters to presage a combination of the two with the possibility of other concerns joining in. One spoken of in this connection is J. S. Cosden, Inc., recently organized at Fort Worth, Tex.

The Panhandle Field of Texas lies between the new New Mexico fields and the North Texas producing area. Some good wells have been brought in and the outlook for the Panhandle is bright. Drilling is said to be very expensive, however, the formations being difficult and depths averaging 3,000 feet or more.

Panhandle Producing & Refining has two producers in Hutchinson County, one having made 350 bbls. daily initial, and the other 150 bbls. daily. A third well in the same field is credited with a showing of oil around 3,000 feet.

British Controlled Oilfields

The old board of directors of the British Controlled Oilfields, Ltd., which is to make way for an entirely new board at the first of the year, has recommended the writing down of capital to adjust a loss of $22,500,000 through the changing of common stock to no par value from $5. The company for the year ended July 31, last, shows $5,000,000 oil sold and stored, thus providing an amount sufficient to pay dividends on the reduced capital if the proposal is approved.

The new board consists of Lord Buckmaster, previously elected chairman by the voting trustees to succeed Sir E. Mackay Edgar; Sir Frederick Eley, Sir Richard Whieldon Barnett, Sir James Barthorpe, Lieutenant Colonel Henry Edward Medlicott, John W. Dennis and Stephen P. Child. The voting trustees at a meeting in London on November 27 recommended that the board be increased to 10 members and that as soon as the necessary formalities had been completed P. Bennett, George du Cros and Gilfrid G. Craig be added to the board.

Following the contemplated conversion of British Controlled Oilfields, Ltd., from a Canadian to a British company, it is proposed to dissolve the voting trust. The voting trustees now consist of D. E. Alves, E. G. Pretyman, Sir W. M. Conway, Sir W. H. Mercer, Sir J. Esplen and A. T. Teniers. At present all of the common stock is vested in a voting trust, and as shares are widely held it is felt there is no justification for voting rights of $45,000,000 capital being in the hands of a few persons.

The British Controlled Oilfields, Ltd., was organized during the oil boom of 1920 and acquired millions of acres of concessions in Central and South America. The first active development took place on the Buchivacoa concession in Venezuela, when agreement was made with the Standard Oil Co. of Venezuela for drilling a number of wells. The company is producing approximately 10,000 bbls. of oil a day from this concession at present, and further development is contemplated in the immediate future, covering the entire area.

British Burmah Oil

Gross profits of the British Burmah Petroleum Co., Ltd., for the year ended July 31, 1925, was £312,270, comparing with £219,273 in the preceding year. After providing for charges and depreciation, net profit was £141,217, against £52,099 in the preceding year. A dividend of 4½ per cent has recently been declared on the company's stock.

Gulf Oil Corp.

Earnings of Gulf Oil Corp. after all charges and taxes during 1925 are estimated at more than $10 per share on the stock. It is reported in some quarters that a stock dividend of 50 per cent will be declared some time next year.

Magnolia Absorbed

The Magnolia Petroleum Co. has sent notice to stockholders that it is ready to make immediate delivery of Standard Oil of New York shares or the cash payment, whichever the shareholder may elect. It added that the right of the Magnolia shareholders to receive Standard of New York shares expires December 29. Unless selection was made and Magnolia certificates surrendered on or before that date, the company states it will be unable to make delivery of Standard of New York shares.

Pierce Petroleum

Funds to meet the sinking fund payment of $100,000 due December 15 on Pierce Oil Corp. 8 per cent sinking fund gold debenture bonds have been deposited in the Chase National Bank, according to Harold B. Thorne, vice president in charge of finances of the Pierce Petroleum Corp. Funds have also been deposited in the Chase National Bank for payment of coupons due December 15 from $1,300,000 outstanding of the same issue of bonds.

South Penn Oil Split-Up

South Penn Oil Co. has notified stockholders of a resolution of the board of directors in which it is recommended that stockholders approve reduction in the par value of the stock from $100 a share to $25. Action on this proposal will be taken at the annual meeting to be held January 19, 1926.

The Texas Co.

Estimates have been made placing The Texas Co.'s net earnings for 1925 at $40,000,000, or approximately $6 per share (par $25) on the stock.

Shaffer Oil & Refining

The Shaffer Oil & Refining Co., a subsidiary of the Standard Gas & Electric Co., reports for the 12 months ended September 30, 1925, gross earnings of $11,551,437, net after taxes of $3,459,917 and balance after interest of $1,864,864.

White Eagle Oil

Estimates place earnings of the White Eagle Oil Co. for 1925 at $1,700,000 after payment of regular dividends and Federal taxes, but before surplus and reserves.

CALIFORNIA PETROLEUM EMPLOYES STOCK PLAN

LOS ANGELES, Calif., Dec. 26.—D. E. O'Brien, secretary of the California Petroleum Corp., announces the inauguration of a plan whereby employes will be given the option of subscribing to capital stock. The plan is similar to that followed by the Standard Oil Co. during the past five years. It is to run for three years beginning January 1, 1926. It will apply also to employes of the American Petroleum Corp., American Oilfields Co., Midland Oilfields Co., Ltd., Niles Lease Co., Red Star Petroleum, Ventura Consolidated, Oak Ridge, Santa Paula, Montebello, Gato Ridge, Colorado, Mexican Oil Lands, Ventura Refining Co. and the Mohawk Oil Co.

Employes are given the privilege of subscribing up to 15 per cent of their salary. The subscription price will be fixed by the trustees on January 1, April 1, July 1, and at subsequent dates. It can in no event be below par value nor more than 10 per cent above the average market price for the preceding three months. The company will credit each person's account with an additional 50 cents for each dollar paid. Trustees will be appointed by the board of directors. The first trusteeship is vested in Jacques Vinmont, R. L. Peeler and D. E. O'Brien, for one year. The California Petroleum will bear the office and clercial expense and all dividends paid and interest earned will be credited to the individual subscribers.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks	Par	Clos. Quot. Dec.28	Clos. Quot. Dec.21	1925 High	1925 Low	1924 High	1924 Low	1923 High	1923 Low
American Republics	..	72¼	73	76	48	48	25	..	..
Associated Oil	25	43⅝	44½	46½	32	34⅝	27⅝	29¼	29½
Atlantic Ref., com.	100	110⅝	108	117½	95¼	140½	78½	100	98⅝
Barnsdall "A"	25	30⅜	29¼	32⅝	18⅝	29½	14	37	9⅞
California Pet., com.	25	34½	31	34½	23⅞	29	19⅜	28½	17½
General Petroleum	25	55⅝	53	59	42	45	38⅝	..	..
Houston Oil	100	72⅞	69⅝	85	59	82½	61	78	40⅝
Independent Oil & Gas	..	33¼	33	41⅜	13½	16¼	5⅝	11¼	3⅝
Indian Refining	10	12⅜	12½	14¼	5½	7	8⅝	8½	4
Louisiana Oil	10	20	17⅝	23⅝	13⅜	..	..	..	..
Maracaibo	..	25⅞	24⅝	35½	20⅝	37½	25⅝	28¼	16
Marland	..	58⅜	56¼	60¼	32⅝	42	29	50⅝	18½
Mexican Seaboard	..	9½	9¾	22½	9	25⅜	14⅛	19⅜	5⅜
Mid-Continent Pet.	..	36¼	35¼	38	25⅜	40¼	22⅝	62¼	23⅜
National Supply	50	55	56	71	54⅜	72½	54	68	54
†Oil Well Supply	25	34¼	34⅝	38	34½	..	..	..	..
Pacific Oil	..	77⅜	63¼	78½	51⅛	58¼	45	52⅛	31½
Pan Amer. P. & T., com.	50	76¾	75	83⅞	61	65	44½	93½	53
Pan Amer., Western B.	..	47½	45⅝	49⅝	37¼	..	..	..	..
Phillips Pet.	..	45⅛	44¼	47⅛	36¼	42½	28⅛	69⅝	19⅜
Producers & Refiners	50	14½	13⅜	32⅝	12½	43½	29⅜	58¼	17½
Pure Oil, com.	..	30⅛	29	33⅜	25¼	30¼	20	32	16¼
Royal Dutch, N. Y., sh.	13.40	55	53½	57⅜	48¼	59⅜	40⅝	55½	40½
Shell Transport	10	*46	*46	45⅜	39⅜	42	33	41¼	29½
Shell Union, com.	..	26⅛	25¼	28⅜	21⅝	22½	15⅜	19½	12⅜
Simms Pet.	10	23⅜	22½	26⅜	17⅜	24	10⅜	16⅜	6¼
Sinclair Consolidated, com.	..	22⅞	21⅜	24⅞	17	27½	15	39⅜	16
Skelly Oil	25	31⅜	31	32½	21⅜	29	17½	35	12⅛
Standard of California	25	61⅜	57½	67¼	61½	68½	55½	64½	47½
Standard of N. J., com.	25	46	42⅞	47½	38⅜	42½	33	44¼	30⅞
Sun Oil Co.	..	40¼	40	46½	33⅜	..	..	..	..
The Texas Co.	25	54	52½	54⅝	42⅜	45⅝	37⅜	52⅜	45⅝
Texas Pacific Coal & Oil	10	16	14⅝	23⅜	11	15¼	8¼	23⅜	5½
Tide Water Oil (new)	..	35¼	34½	152	122	151	116¼	144	94
Transcontinental	..	4¼	4¼	5⅞	3½	6¼	3⅝	14½	1¼
Union Oil of California	25	41	36	43⅜	33⅛	39	35½	..	..
Union Tank, com.	100	95	*96	134	118	132⅜	94	114	106
White Eagle Oil & Ref.	..	28	27¼	31⅝	25⅝	29⅜	23⅛	30⅝	29½
Standard Oils									
Anglo-American Oil	£1	18⅝	*18	26⅝	18	18⅝	14⅝	19⅝	13½
Borne Scrymser	100	234	*232	240	205	264	150	153	110
Buckeye Pipe Line	50	*57¼	58⅜	72	54	85½	51	94	57½
Chesebrough Mfg. Co.	25	*67½	*67	74	48¼	52½	29¼	340	205
Continental	10	25⅝	24⅞	31⅛	21⅝	..	..	..	..
Crescent Pipe Line	25	15	*15	17½	10	20	11¼	25	15
Cumberland Pipe Line	100	138	139	156	128	148	108	117	80
Eureka Pipe Line	100	*61	*61	96	70	106	74	117¼	87
Galena Signal, com.	100	29⅞	28½	68½	28½	69⅝	52⅛	78	55
Humble Oil & Refining	25	92	86⅝	93⅝	42½	43¾	36	41	28¼
Illinois Pipe Line	100	136	136½	154½	127	161	123	171	115
Imperial Oil (Ltd.)	..	37⅜	36⅛	37½	27½	119	99	123	92
Indiana Pipe Line	50	60½	60½	84	60	110	66	103	81
International Pet. Co.	10	34½	32⅜	35⅝	22½	24⅜	16⅞	24⅝	13½
National Transit Co.	12.50	17⅝	18¼	25½	19½	25⅞	20⅝	20	19½
New York Transit	100	51	51¼	79	50	97	54½	138	70
Northern Pipe Line	100	73	74½	88	70	107½	72	111	96
Ohio Oil Co.	25	66½	65	75¼	60	79½	52	85⅝	48⅝
Penn.-Mex. Fuel	25	22	21	44	20	35⅝	27	45	10½
Prairie Oil & Gas	25	57½	55	65½	45⅞	269	193	272	152
Prairie Pipe Line	100	126	127½	127½	106	111	100	117	93
Solar Refining Co.	100	208	*208	259	200	240	170	212	161
South Penn Oil	100	178½	172½	197	139	176	117	196	100
Southwest Pa. Line	100	52	*53	54	53	89	68	89	66
Southern Pipe Line	100	63	*65	103	67½	100	80½	116	87
Standard of Indiana	10	70½	66¼	70	59½	69⅝	54¼	69⅝	48½
Standard of Kansas	25	35	33⅜	46	30¼	50⅜	32½	56¼	36⅛
Standard of Kentucky	25	*133½	134½	137	114⅝	121⅝	101	109½	78
Standard of Nebraska	100	243	242	270	231	262	198	280	186
Standard of New York	25	46⅞	45⅝	48⅝	40	48	37⅜	49⅜	35½
Standard of Ohio, com.	100	360	360	369	338	337½	277	320	270
Swan & Finch, com.	25	21	22¼	27	12	28	20	..	..
Vacuum Oil	25	106⅝	107½	109½	80½	83½	50¼	55½	40
Washington Oil	..	*30	*30	35	30	30	25	28	20¼
Miscellaneous									
Gulf Oil Corp. of Pa.	25	94	87¼	98¼	63½	67⅝	56	68¼	45⅝

*Bid, no sales. †Bid ex stock dividend. ‡Oil-Well Supply stock was shown as selling on December 7 at 24⅝. This was a typographical error, and should have read: "34⅝."

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Dec. 28	59.40	Nov. 23	56.49	Oct. 19	50.03		
Dec. 21	56.86	Nov. 16	57.31	Oct. 10	52.18		
Dec. 14	56.89	Nov. 9	56.47	Oct. 5	52.94		
Dec. 7	57.99	Nov. 2	55.67	Sept. 26	51.29		
Nov. 30	56.93	Oct. 26	55.61	Sept. 21	51.65		

ROCKY MOUNTAIN AREA

(Continued from Page 38)

Wilson Dome, Natrona County. This well is a wildcat, about 35 miles west and north of Casper, and was expected to make a test of the Tensleep sand. The Lakota sand came in at 1,760 feet and the well was carrying a hole full of water at the time, this water coming from the Dakota sand above the Lakota. No figures on what the well will make can be had at present, but the oil is a light grade crude and conservative estimates place the well at 300 bbls.

The California Co., drilling in the Byron Field, in Park County, northwestern Wyoming, has its No. 2 in the Muddy sand and a showing for a small producer. The company will not stop, but will go on down to make a test of the Lakota. This well is on Section 31-56-96.

This company drilled a well that made several flows about a year ago and caused considerable excitement. Later the well failed to make a producer. It was then drilled to 4,168 feet and tested the Torchlight sand and was considered a dry hole. While it was standing idle, it made another flow and now is again standing idle while the California Co. is wondering what to do with it. The No. 2 well made about 4 bbls. when allowed to stand for a half day, from the Muddy sand and the crude is a light oil.

Deep Hole in Grass Creek

The Midwest Refining Co. has reached a depth of 3,800 feet in the deep hole being drilled in Grass Creek Field, Section 19-48-98, and the well has passed through the Embar sand at 3,758 feet, finding it dry.

The Midwest Refining Co., on Section 25-36-85, near Powder River, Natrona County, has the deep test there at 3,100 feet and drilling after having set the 6-inch casing at 3,000 feet.

The Marland Oil Co. found nothing on the Dugout Creek well, located west of the Salt Creek Field, Section 10-40-80, after drilling to 3,000 feet and will probably abandon at once.

The Midwest has shut down its well in the Little Buffalo Basin in the Big Horn Basin and the Carter Oil Co. has shut down all its drilling wells at Billy Creek, in Johnson County, until spring.

A rumor of a new strike comes from Carter County, Montana, where the California Montana Oil Syndicate is drilling a wildcat on Section 7-8-57. This well is setting 10-inch pipe and a showing of oil was reported to have been found. As the well is about 30 miles from any town and in a wild region, with the trails blocked with snow, no reliable news has been had. The syndicate is backed by wealthly men in the East.

Near Colorado Springs, Section 17-16-65, the Ohio Oil Co. has started a wildcat on a new structure the firm's geologists have recently mapped. As the Frontier formation is absent in Colorado, this well is designed to test the Dakota formation.

The Ohio Oil Co., drilling a wildcat well on Section 13-29-82, Natrona County, Wyoming, on the Mellen Dome, has abandoned the hole at 3,000 feet and this will probably be the last well drilled on the structure. No showing of oil and gas in commercial size was encountered in the well. This well was drilled entirely by a gasoline engine and the saving in water cost was large.

New Mexico Operations

In New Mexico, in the Artesia Field, the Ohio Oil Co. brought in a nice well on Section 5-18-28, at 2,355 feet, that started off at 100 bbls. On Section 4-18-28, in the same field, the same company brought in a good producer that started off at 110 bbls. at 2,416 feet.

In the New Mexico wildcat districts, Lewis and others are changing to standard tools with their wildcat on Section 24-8-23, at a depth of 2,861 feet. Carl Dresser and others are drilling a wildcat on Section 24-10-27 in Chaves County, and the hole is at 3,000 feet with nothing yet.

The Red Feather Oil Co., Section 30-4-9, Catron County, is drilling at 1,270 feet and on Section 27-10-26, the New States Oil & Gas Co. is drilling at 1,500 feet, in Chaves County. In the same county, Section 23-14-26, the Schaeffer Oil & Gas Co. is drilling at 1,000 feet.

The Marland Oil Co. is down 3,260 feet in San Miguel County and is waiting for cement to set. Pierce and others on Section 14-15-10, McKinley County, have the hole at 1,200 feet. The San Juan Basin Oil Syndicate is drilling at 1,670 feet and has passed through the Dakota without finding any oil; this location is on Section 13-31-1, Rio Arribo County.

The Midwest Refining Co. completed four new wells in Salt Creek Field the past week. The Wyoming Associated Oil Co. completed a producer on Section 24-40-79 at 1,170 feet and will shoot to make a well. The same company has a second Wall Creek sand well on Section 26-40-79 that will do 25 bbls. at 2,519 feet.

The Midwest Oil Co. has a producer on Section 34-40-79 that will do 10 bbls. at 1,197 feet and the Salt Creek Consolidated Oil Co. has a second Wall Creek sand well on Section 31-40-78 that will make a pumper from a depth of 1,918 feet.

The Midwest Refining Co. has placed all of its wells in the Salt Creek Field on power lines from the electrical plant and is operating from the plant entirely. The power has proved very satisfactory in the past year and the saving has been large. The Midwest now controls and operates practically the whole of the central part of the Salt Creek Field.

Field Runs for the Week

Salt Creek	57,110
Teapot	1,490
Big Muddy	3,290
Grass Creek	2,910
Elk Basin	630
Greybull	25
Rock River	2,870
Lance Creek	2,580
Poison Spider	500
Osage	270
Hamilton Dome	1,160
Lander	260
Byron	30
Pilot Butte	30
Lost Soldier	4,290
Ferris	40
Cat Creek	3,280
Sunburst	12,760
Lake Basin	610
Florence	400
Iles Dome	187
Moffat	2,787
Fort Collins	1,139
Boulder	25
Rangeley	100
Tow Creek	114
Hogback	530
Rattlesnake	219
Artesia	3,800
Miscellaneous	110
Total	103,546

NORTH CENTRAL TEXAS

(Continued from Page 30)

Jack Dalton Oil Co.'s No. 6 Dalton, fishing at 4,010 feet; Singleton and others' No. 1 Smith, drilling at 2,910 feet; Whatley and others' No. 1 McClure, 350 feet; Adams and others' No. 2 Pollord, 4,065 feet; Hart and others' No. 2 Cardwell, 3,120 feet; Moore and others' No. 2 Slemmons, 1,165 feet; Pender Production Co.'s No. 2 Rasmussen, fishing at 880 feet.

Callahan County

Brannon and others' No. 1 Block, drilling at 1,400 feet; No. 1 Block 28, 1,200 feet; Conway and others' No. 1 Thorn, 375 feet; Cranfill and others' No. 1, Block 37, 1,420 feet; Diamond and others' No. 1 Terry, 600 feet; Holmack Oil Co.'s No. 1 Conlee, 2,100 feet; Hamil Drilling Co.'s No. 1, Block 24, 1,030 feet; Kirk and others' No. 1, Block 3, 820 feet; No. 2, Block 29, setting casing at 1,430 feet; Mitchell and others' No. 1, Block 24, drilling at 1,250 feet; McCamey and others' No. 1 Strohon, 1,300 feet; Mook-Texas Oil Co.'s No. 4 McDonough, 1,185 feet; Nichols and others' No. 1, Block 16, 1,260 feet; Petroleum Exploration Co.'s No. 1 Smart, 1,160 feet; Riddle and others' No. 1, Block 26, 760 feet; Root Drilling Co.'s No. 1, Block 38, 1,160 feet; Shackelford and others' No. 1, Block 39, 540 feet; Weiler Brothers' No. 1, Block 32, 530 feet; Williams and others' No. 1 M. K. T., 220 feet.

Mitchell County

Atlantic Oil Production Co.'s No. 2 Womack, cleaning out at 3,042 feet; Morrison and others' No. 1 Hyman, drilling at 1,030 feet; Magnolia Petroleum Co.'s No. 1 Coleman, 1,970 feet; No. 1 Watson, 2,700 feet; California Co.'s No. 10 Abrom, 2,950 feet; No. 4 Elder, cleaning out at 3,072 feet; No. 1 Swenson, drilling at 1,700 feet; No. 1 Adams, setting casing at 625 feet; No. 15 Morrison, drilling at 165 feet.

Howard County

Deep Rock Oil Co.'s No. 1 Scott, drilling at 2,800 feet.

Sterling County

Co-Operative Lease & Developing Co.'s No. 1 Dauthit, drilling at 760 feet; Harty and others' No. 1 Reynolds, 780 feet; Wrightsman Petroleum Co.'s No. 1 Collins, spudding; White Eagle Oil & Refining Co.'s No. 1 Mills, fishing at 3,060 feet.

Coleman County

Bateman and others' No. 1 Morris, drilling at 712 feet; Conyon Oil & Gas Co.'s No. 1 Harris, 2,190 feet; English and others' No. 1 Crawford, 408 feet; French and others' No. 1 Morris, 600 feet; Gilman and others' No. 1 Aston, 1,390 feet; Gwinupp and others' No. 1 Dibrell, 410 feet; McLester Oil Co.'s No. 1 McDermitt, 2,000 feet; Merry Brothers and others' No. 1 McClellan, 800 feet; Texas Pacific Coal & Oil Co.'s No. 1 Powell, 800 feet; Wright and others' No. 1 Hutchings, 402 feet; Gladys Belle Oil Co.'s No. 3 Watson, drilling at 2,280 feet.

Tom Green County

Church and others' No. 1 Williams, drilling at 810 feet; Penn and others' No. 1 Turner, 108 feet.

Upton County

Dixie Oil Co.'s No. 1 Burleson, coring at 502 feet; Independent Oil & Gas Co.'s No. 1 Burleson, spudding.

Crane County

Cardona Oil & Potash Co.'s No. 1 Cowden, drilling at 3,600 feet; Texas Developing Co.'s No. 1 Cowden, drilling at 3,520 feet.

Reeves County

Deep Rock Oil Co.'s No. 1 Tatum, drilling at 1,342 feet; World Oil Co.'s No. 1 Kloh, drilling at 925 feet.

Pecos County

Tom Adams Oil Co.'s No. 1 Gray, drilling at 800 feet; Dixie Oil Co.'s No. 1 Hershenson, underreaming; Transcontinental Oil Co.'s No. 1 Perry, showing oil at 1,825 feet.

Crockett County

Cooke and others' No. 1 University, drilling at 3,250 feet; Humble Oil & Refining Co.'s No. 3 Powell, 2,360 feet; No. 1 Song, 1,135 feet; Marland Oil Co.'s No. 1 Todd, fishing at 1,945 feet; Wade and others' No. 1 Powell, fishing at 1,060 feet.

Hutchinson County

American Refining Co.'s No. 1 Weatherly, fishing at 3,325 feet; Conyon Oil Co.'s No. 1 Whittenburg, drilling at 2,175 feet; No. 2 Whittenburg, 260 feet; Centerfield Oil & Refining Co.'s No. 1 Smith, 1,165 feet; Currie Brothers and others' No. 1 Smith, 400 feet; Douglas Oil Co.'s No. 1 Whittenburg, 2,930 feet; McIroy and others' No. 1 Smith, spudding; McIlroy Brothers' No. 2 Smith, spudding; McKinney and others' No. 1 Weatherly, setting casing at 1,985 feet; Middleton and others' No. 2 Weatherly, drilling at 2,352 feet; Native Oil Co.'s No. 1 Johnson, 1,305 feet; Phillips and others' No. 1 Weatherly, underreaming; Tex-O Oil Co.'s No. 1 Johnson, drilling at 2,735 feet; Twin Six Oil Co.'s No. 2 Kingslord, fishing at 2,435 feet; Travelers Oil Co.'s No. 1 Kingslord, drilling at 2,175 feet; Tyrrell and others' No. 1 Smith, spudding; Western Enterprise Oil & Gas Co.'s No. 2 Smith, underreaming Westex Oil Co.'s No. 1 Whittenburg, drilling at 1,950 feet; Whittington and others' No. 1 Kingslord, drilling at 500 feet.

Moore County

Amarillo Oil Co.'s No. 2-A Masterson, drilling at 900 feet.

Potter County

Amarillo Oil Co.'s No. 4-A Bivins, drilling at 2,650 feet; Prairie Oil & Gas Co.'s No. 1 Bivins, drilling at 2,628 feet.

CHAMBER OF MINES ELECTS NEW OFFICERS

LOS ANGELES, Calif., Dec. 26.—Chester W. Brown, director of exploration and production of the Union Oil Co. of Califonia, was elected president of the Chamber of Mines and Oil at its annual election. Phillip Wiseman, president of the United Eastern Mining Co., and Harry J. Bauer, president of the Pacific Gasoline Co., were elected vice presidents; and H. L. Westbrook, vice president of the Belridge Oil Co., treasurer.

The following were elected directors of the Chamber:

H. J. Barneson, assistant general manager, General Petroleum Corp.; Ward Blackburn, manager, Los Angeles branch, Ingersoll-Rand Co., and A. S. Cameron Steam Pump Works; R. A. Broomfield, vice president and general manager, Ethel D Co.; E. B. Gilmore, president, Gilmore Oil Co.; W. R. Guiberson, vice president, Guiberson Corp.; H. H. Hillman, vice president, California National Supply Co.; Joseph Jensen, geologist, Associated and Pacific Oil companies; F. R. Kenney, president, Marland Oil Co. of California; M. E. Lombardi, vice president, Pacific Oil Co.; A. B. Macbeth, executive vice president, Southern California and Midway Gas companies; C. C. Magenheimer, president, Sentinel Oil Co.; Theodore Martin, attorney; W. C. McDuffie, vice president, Shell Co. of California; A. C. McLaughlin, vice president and general manager, Associated Oil Co.; E. J. Miley, president, Miley Oil Co. and State Consolidated Oil Co.; H. L. Payne, chemical engineer, Baverstock & Payne; R. L. Peeler, president, California Petroleum Corp.; F. C. Ripley, manager, Chanslor-Canfield Midway Oil Co.; James A. Talbot, president, United Oil Co.; Waller Taylor, vice president, Llewellyn Iron Works; F. C. Van Deinse, general manager, Ventura Consolidated Oil Fields, and A. L. Weil, attorney.

GREATER EXPORT NEED FOR OIL IS EXPECTED

That the American petroleum industry, as represented by investment, production and refining, has trebled since the war, is the statement of E. C. Winters, president of the Lion Oil Refining Co., in discussing the future of oil in this country.

An illustrated pamphlet being mailed to stockholders of the company carries the following message:

"Realizing that foreign oil fields will take both time and capital to be developed—time and capital which just now can ill be spared by the world as a whole—American business men are preparing to meet a greater need on the part of this nation and of the world for petroleum products than has ever before existed. They are, moreover, making every effort to improve the conduct and technique of the American petroleum industry, in the elimination of waste, increase in efficiency and education of the public to a wise and understanding attitude toward the industry.

"These considerations—and the faith of business men in the future of American petroleum—are circumstances which auger well for the continued greatness of that industry."

ROYALTY HEARING JANUARY 7

AUSTIN, Tex., Dec. 26.—Hearing on the University of Texas oil royalties mandamus test brought by Attorney General Moody has been set by Supreme Court for submission January 7 before Section B of the Commission of Appeals, Presiding Judge Ben H. Powell announced. Mr. Moody attacks the 1925 law which attempted to put the royalties into the available fund, by seeking a mandamus order directing Treasurer W. Gregory Hatcher to put the money in the permanent fund. Both Mr. Hatcher and the university regents requested him to bring the suit.

ASSOCIATIONS FILE DEPLETION PROTEST

(Continued from Page 24)

one well proves an entire structure or field is to attempt to establish by legislative fiat the presence of oil or gas where the drill will subsequently demonstrate no oil or gas exists.

What Experience Shows

Discovery depletion was designed as an allowance for replacement which must be sufficient to meet the contingencies in this, the most hazardous of the major industries. The certain decline of existing wells renders it necessary that every enterpriser who wishes to remain a producer must wildcat continuously. Wildcatting consists in exploration, geological work, procuring and carrying at tremendous expense many unproductive leases awaiting their turn in the development program. Merely drilling a well is not all there is to wildcatting. Without this great volume of activity, carried on by both large and small operators, the country's production would certainly decline—and at an astonishing rate. The statistics show that the oil producing branch of the business is not self-sustaining—that vastly more money has been put into it than has ever been taken out. Hence it extends or expands on capital from two sources, namely, the reserved proceeds of oil from successful properties and the new capital that flows in so long as there is reasonable chance of profit after risks are overcome and taxes are paid.

While the hazards of the business are too numerous and intricate to enumerate and describe here, there is one that is ubiquitous and of special significance in the present inquiry. It is the matter of finding a new productive lease. As hereinbefore pointed out, that new productive lease can only be secured by two methods. One is to purchase a tract or lease already producing—the other is to develop it. Development of a productive lease involves the taking of many leases on many structures and drilling them until a productive one is found. To illustrate the hazard here involved, the Mid-Continent Oil and Gas Association counted from the well reports of the oil trade papers the "Number One" wel's drilled in Oklahoma and Kansas during the five-year period ending October, 1925. The "Number One" well is the first one on an undeveloped lease. It usually proves or condemns the lease and determines whether the enterpriser has a new oil property or a loss of time, effort, well cost and purchase price. The count included all of the Number One wells and thus included offset locations, semi-wildcat and rank wildcat wells. There were 12,577 of these wells, of which 4,830 produced oil in varying amounts and 7,747 failed. Thus 61.58 per cent of these new ventures failed to produce oil. These figures compare closely with other investigations made at different times and places and therefore give an accurate index or measure of the hazard encountered by all oil developers. No other major industry has such a hazard. It, with other attendant risks and uncertainties, reduces the ability of members of this industry, whether individual or corporate, to pay annual income taxes upon the same basis as other industries not so hazardous. Therefore, the allowance for replacement must take cognizance of these hazards.

Based on Discovery of a Pool

The pending provision in the revenue bill as it passed the House of Representatives is a recrudescence of the 'discovery-of-a-pool" idea. It substitutes the date of completion of a well for the date of acquisition of the lease as an element in determining the right to claim discovery depletion and provides that the first well in a given region shall prove 160 acres as against subsequently completed wel's. That, in turn, these subsequent wells shall each prove 160 acres as against the later wells, etc. So that in the case of orderly drilling, one location at a time, in each direction from the first well, the whole pool would automatically become proven ahead of the drill so that only one discovery could be had in any pool. The provision is so worded that one may lose his right to claim discovery even after contributing to the discovery well. This would occur where the 160-acre proven area of another well overlapped the contributor's location before he got his well completed although his location might have been unproven when his well was commenced. He might thus lose the right to claim the allowance by only one day or a few hours. This simply illustrates the difficulty inherent in any attempt to base the depletion allowance solely upon date of reaching the pay sand or upon any other finely drawn distinction which overlooks the original and fundamental replacement fund idea.

We invite the attention of the Finance Committee to the fact that in the pending bill no such restrictive change has been attempted with reference to mines. The existing law is unchanged as to them. Stated briefly, the effect of paragraphs (1) and (2) of the new provision is to continue to recognize date of acquisition of the tract or lease as a basis for claiming the allowance in the case of mines, but to eliminate it and, therefore, restrict the provision in the case of the more hazardous undertaking of finding oil and gas wells. The necessity for a replacement fund cannot be said to be less general in the oil producing business than in the mining business.

Failure to Appraise 1924 Limitation

The oil industry believes that the present law with the 1924 limitation of 50 per cent of the net income to guard against excessive claims or valuations in isolated cases adequately protects the Government and is free from objection. The criticisms stated in published reports of the evidence taken before the so-called Couzens Committee relate to alleged excessive valuations claimed or allowed during the first three years of the operation of the act of 1918 and before any limitation was adopted. There appears to have been no data presented or considered by that committee as to the present operation of the 1924 law. It is unfair to condemn or to emasculate the present provision because of what may have happened under the act of 1918. The limitation to 50 per cent of the net income has had a more profound effect than many realize. To illustrate: Suppose an operator made a discovery in 1920 when the price of oil was high ($3.50 per barrel) and consequently obtained a high valuation which would create a depletion unit for say, $1 per barrel. Under the unlimited 1918 act this depletion unit was rigid and inflexible so that it would continue throughout the life of the property, even though the price of oil went down. If oil went down to $1 per barrel, the depletion deduction would absorb the entire gross income. This was an unforeseen objection. But it cannot occur under the 1924 limitation. If oil is now selling at a price which only yields the producer an operating profit of 10 cents per barrel, the 50 per cent limitation reduces his depletion deduction to 5 cents per barrel instead of the $1 unit established by the 1920 valuation.

We petition the Finance Committee to carefully consider the present workings of the 1924 law and its freedom from objection before adopting any substitute measure.

Difficulties Not Ineradicable

Sentiment for a change in the existing law seems to have arisen from discussions of the difficulty involved in making correct and reliable valuations as a basis for the discovery depletion deductions. At various places throughout the printed hearings of the Couzens Committee it appears that when criticisms were made of early valuations under the 1918 law, Treasury Department representatives stated that because the valuation was required at date of discovery, or within 30 days thereafter, it was impossible to avoid mistakes resulting in undervaluations and overvaluations.

At page 2766 (part 15) of those hearings, Mr. Gregg, the solicitor for the Bureau of Internal Revenue, made the following statement:

"It is not the position of the department that the situation is perfect with respect to depletion. We recognize, as I feel the committee does, that errors have been made, that we have lost taxes in some cases, and we have gotten excessive taxes in others, due, usually, I think, to the law; but the point that causes the trouble is this: The Income Tax law puts on the bureau the task of valuing all of the mineral properties of this country as of March 1, 1913, and in the case of oil principally, at the date of discovery, every time a discovery is brought in. It is an impossible task to do it accurately. It cannot be done accurately. We do the best we can. I have argued here this morning to show that it was the best that could be done, but we do not claim it is perfect.

"If something could be done in the law to do away with the necessity for valuing mineral properties for the purpose of determining depletion, it would be the biggest help of anything that has ever been done to the Bureau of Internal Revenue.

"If that could be done, it would take a tremendous burden off of us. It would help the administration of the bureau tremendously, and would certainly be more accurate than the present system."

In line with the above quoted suggestion of the solicitor, and assuming that the valuation requirement and its attendant administrative difficulties were responsible for the restriction placed upon oil discoveries in the pending bill, we desire to make a constructive suggestion for a change in the proposed law which will reduce the administrative burden and the aggregate amount of discovery depletion allowance to oil and gas wells without destroying the general application of the depletion deduction.

Discussion of Valuations

At page 272 of part 2 of the Select Committee's hearings, Dr. T. S. Adams, the Treasury Tax Advisor, during the discussion of valuations, made the following statement:

"I think, in general, certain carefully selected percentages of gross income, or operating income, would have been infinitely better for the taxpayer, for the United States and for everybody else had they been adopted by the Government from the beginning, and it may be distinctly practicable to adopted them from now on if Congress wants to do it. These hazardous industries have an allowance for risks and hazards. It should be a general allowance, but it should be a simple allowance, and there are simpler methods of making allowances than those authorized by statute."

In support of this suggestion we desire to point out, as hereinbefore illustrated, that the effect of the 1924 limitation to 50 per cent of net income has been to greatly reduce the significance of the valuation. If a high depletion unit is arrived at as a result of a high valuation it is subject to reduction through the operation of the limitation. And if the price of oil is reduced following the valuation and the fixing of the unit based thereon and does not again reach the price prevailing when the valuation was fixed, the resulting depletion unit can never be utilized.

With these considerations in mind and with the desire to make a helpful suggestion for use in case the Finance Committee denies our petition to reinstate the provisions of the 1924 law, we suggest that, as a substitute for paragraph (2) of subdivision (c) of Section 204, as it now appears in the pending measure, a new provision be devised of general application and eliminating the valuation requirement as to oil and gas wells drilled on or after January 1, 1925, by adopting a percentage of gross income as the measure of the allowance in all cases except where depletion, computed solely upon cost, exceeds the percentage figure adopted.

In order to facilitate the development of the specific language of such a substitute, the petitioners tender to the Finance Committee the cooperation of their representatives who will attend any conference desired by the committee for that purpose or for the purpose of supplying any additional information on the subject.

Conclusion

If we have sufficiently shown that the discovery depletion provision was not a mere war measure, that there is no logic in restricting its use to that of a mere prize or reward to the particular wildcatter who through fortuitous circumstance first reaches the pay sand in a particular locality, that the proposed change contained in the house bill is inadequate and unduly restrictive, we shall conclude with a brief characterization of the discovery depletion provision as we view it.

Briefly, the oil industry has always regarded the provision as complemental, that is to say, it supplies something otherwise lacking in any system of income taxes which makes no concession in rates to the extra hazardous industries. Extreme hazard and risk reduce ability to pay. Likewise irregularity of income and sudden demands for cash capital, to both of which this industry is subject to a marked degree.

David R. Friday, the economist, in discussing income as a basis for taxation, says that "continuity is the essence of income." John Stuart Mill in enumerating the requisites of a sound income tax said that "allowance" should be made, "in the case of variable incomes for their precariousness." And George E. Roberts, the author of Economics for Executives, states that "Every tax should be consistent with high industrial efficiency." All of these principles have application here and the deduction for replacement is necessary to the efficiency of the oil producing industry. Without it the small, non-integrated oil producer would be placed at a disadvantage and the efficiency of the whole oil producing industry would be impaired. We, therefore, ask serious consideration of our request to retain the 1924 law on the subject or to adopt a percentage provision which will be of equal efficacy.

RECEIVER APPOINTED FOR REFUGIO WELLS

HOUSTON, Tex., Dec. 26.—T. W. Gregory, Houston, former Attorney General of the United States, was appointed receiver for two gas wells in the Refugio County gas field by Judge J. C. Hutchinson of the Federal Court here.

Ownership of the wells is in dispute, the claimants being the Houston-Gulf Natural Gas Co. (Moody-Seagraves interests) and the Houston Pipe Line Co., a natural gas subsidiary of the Houston Oil Co. The dispute arises from alleged purchase of the wells and Rook lease from the Pratt-Hewitt Oil Corp. of Lincoln, Neb., which originally developed the gas field in Refugio County and then dissolved. The Pratt-Hewitt Corp. seeks to have a contract for the sale of the gas cancelled.

The receiver will take charge of the two wells, sell the gas and file a report with the court.

NEW JERSEY CHAIRMAN ON EUROPEAN OUTLOOK

NEW YORK, Dec. 26.—George H. Jones, the new chairman of the board of directors of the Standard Oil Co. of New Jersey, has returned from abroad, well pleased with the oil outlook in Europe.

"Oil companies abroad are doing better," said Mr. Jones. "There is a gradual increase in oil consumption in practically all the principal countries."

DEEP TEST NEAR KANE, PA.

KANE, Pa., Dec. 26.—Drilling on the deep well which is being put down by the United Natural Gas Co. on its lease at LaMont, 4 miles from Kane, is progressing nicely. The well was started early in the fall and aside from being held up by a couple of short "fishing jobs," not much time has been lost. The drill has reached 3,200 feet. The intentions are to drill it to a depth of at least 7,000 feet.

REFINING AND MARKETING

TWO CENTS A GALLON CALIFORNIA ADVANCE

LOS ANGELES, Calif., Dec. 26.—The outstanding development of interest in California this week was the increase of 2 cents per gallon in gasoline retailed in Los Angeles territory. The Standard boosted the price on December 22 and practically every other marketing company followed suit within 24 hours. The increase made was restricted to the territory adjacent to Los Angeles and no change was made at any other point. This brings the retail price in Los Angeles to 18½ cents, reestablishing the quotation existing on September 4, at which time the Pan American announced a 2-cent reduction, bringing the price down to 16½ cents.

Clarence Fuller, president of the Richfield Oil Co., commenting on the latest revision, called attention to the inequality existing between the present price of crude oil and gasoline. As a matter of fact, the relative price of crude oil, the major source of gasoline, and gasoline itself, is all out of proportion and must, some one of these days, be adjusted by further increases in the price of motor fuel. A few years ago when crude oil was at substantially the same price level it is today, gasoline was retailing at 27 cents. Marketers have been fighting a losing game between the price of raw material on one hand and the price of gasoline on the other, and the latest increase is attributed to the law of supply and demand. One of the primary reasons, however, for the latest increase was the differential existing between the retail price in Los Angeles territory and that prevailing at other points.

For some time gasoline has been retailing in San Francisco at 20 cents and in Los Angeles at 16½ cents, a differential of 3½ cents. In the past the difference in the price between these two territories has been approximately 1 cent a gallon and the latest move of the Standard was probably prompted by a desire to establish a uniform schedule in order to prevent the dumping of carload lots of gasoline into other areas. Of course, the increase made will also benefit the numerous independent companies operating throughout the south, many of whom have been hit pretty hard by the previous ridiculously low price.

INSTALL CRACKING PROCESS

THERMOPOLIS, Wyo., Dec. 26.—Maurice Singer, the newly elected president of the British Associated Oil Co., Ltd., a $5,000,000 concern, arrived in Thermopolis to take charge of the company's operations.

B. V. Hole has been engaged as superintendent, and the British Associated will drill a well in the Warm Spring Field immediately.

Mr. Singer is also the head of the Alliance Oil & Refining Co., and says that during the coming spring a new cracking process will be installed at the refinery at Thermopolis. The process is the invention of Dr. E. T. Hessle and W. Leigeman, chemical engineers, and by its use the Alliance Co. hopes to secure a larger percentage of gasoline than has formerly been extracted.

ENLARGING REFINERY

LOUISVILLE, Ky., Dec. 26.—A new still is being constructed by the Louisville Petroleum Co. at its plant near the State Fair Grounds here, which will have a capacity of 3,500 bbls. of crude daily, according to W. M. Mitchell, president of the company. Improvements now under way at the plant include bubble towers and a re-run tower. The company expects to double its output during 1926, according to Mr. Mitchell.

TEXAS CUTS CARBON BLACK PERMITS AND DEFINES CONSERVATION POLICY

AUSTIN, Tex., Dec. 26.—Far-reaching action, defining the State's policy in conservation of natural gas, was taken by the State Railroad Commission, in cutting down applications for carbon black manufacture from residue gas in Stephens County from 38,000,000 feet daily to 24,000,000 feet, and in denying outright an 8,000,000 permit where it was shown the gas was to come from a gas well and not as residue from the manufacture of casinghead gasoline.

The commission, after a hearing, granted to Texas Carbon Industries of Austin a permit to use 6,000,000 feet of waste residue gas daily for carbon black manufacture; to Phillips Petroleum Co., Bartlesville, Okla., 12,000,000 feet daily; and to Humble Oil & Refining Co., Houston, 6,000,000 feet daily. The J. M. Huber Co. of Louisiana was denied a permit.

A hearing of the first application was held on November 23 and the others on November 30. The Lone Star Gas Co. protested the applications and the Chambers of Commerce of numerous cities in Central and North Texas manifested a keen interest, fearing that the granting of the permits might lessen the volume of natural gas available to such cities for domestic and industrial purposes. In each instance applicants requested a permit valid for five years.

On December 21, the commission granted three of the applicants a permit to burn an aggregate of 24,000,000 feet of residue per day, and denied permit to burn the other 14,000,000 feet applied for. The permits granted are made valid for only four years instead of five as asked. One of the applicants was denied a permit because it developed in the hearing that it expected to use gas coming from a gas well.

Every permit is further restricted with the provision that gas for use in the proposed carbon black plant be diverted by the Railroad Commission for domestic or industrial use whenever there is an available demand for either purpose. To further guard public interests, each order provides that the commission may, after hearing, cancel the permit at any time it appears that the use of the gas in question for carbon black is causing or contributing to a waste of oil or natural gas. The commission has always refused to permit the use of gas from a gas well in the manufacture of carbon black.

With these restrictions the commission feels certain it has exercised every reasonable precaution in behalf of the cities and towns desiring natural gas. Under these orders all domestic and industrial users of natural gas can be assured that it will not be used to manufacture carbon black when there are pipe lines with sufficient capacity to transport it to the cities desiring it for domestic and industrial use. All pipe line companies contemplating the laying of additional pipe lines have the same assurance for the orders provide that these pipe lines and industrial and domestic consumers must always have a preference over carbon black manufacturers.

In its opinion the commission finds, as a matter of fact, that 70,000,000 feet of gas coming from oil sands in oil wells and passing through gasoline plants is now daily blown into the air in Stephens County alone, a total loss to the land owners, the gasoline manufacturers and the public at large. It finds further, that the Phillips Petroleum Co. is shutting in oil wells in the Ibex Field in Shackelford County and with these oil wells 30,000,000 feet of gas, waiting for a market for this gas. Adding the 70,000,000 that is wasted in Stephens County to the 30,000,000 that should be produced in the Ibex Field in Shackelford County, the commission finds that there is an aggregate surplus and waste in these two counties alone of 100,000,000 feet of casinghead gas daily.

The opinion also states that the only additional pipe line proposed is one of a practical capacity of 50,000,000 feet per day to be constructed by the Lone Star Gas Co. into Stephens County and the Ibex Field. When this additional pipe line is constructed, the commission finds there will still be a daily waste of 50,000,000 feet of gas from oil wells in this territory. The opinion concludes with the following statement:

"Nor will the commission permit the burning of residue casinghead gas in the manufacture of carbon black so long as there is any possibility of its being diverted into channels that will make it available for domestic or commercial uses. But the owners of this casinghead gas undoubtedly have the right under the law, so long as no other available use may be found for this gas now wasting in the air, to devote it to any purpose which might offer some salvage of its value, and their rights are entitled to and must have consideration at our hands."

RESTRAINING ORDER MAY OPEN CLOSED STATIONS

JACKSON, Miss., Dec. 26.—Attorney General Rush Knox was restrained from interfering with the business of the Standard Oil Co. of Kentucky and The Texas Co. under a temporary injunction granted by United States District Judge Edwin R. Holmes.

Gasoline and oil filling stations of the two companies, which were closed all day in every section of the State, are expected to resume business under the temporary order, pending final hearing of the case.

The action in closing the stations followed an injunction obtained by the Attorney General to compel the companies to maintain prices of not more than 16 cents a gallon on gasoline, the State tax of 3 cents included. It was charged by the Attorney General that the two companies were selling it at this price in Tunica County, a lower price than in other communities, in violation of the Mississippi anti-trust law.

The Attorney General also charged that the companies had entered into a conspiracy to destroy competition and to fix the price of gasoline, kerosene, lubricating oil and other oil products in the State. The injunction issued by Justice McGowen of the Supreme Court was made returnable before Judge Lomax at Tunica.

GASOLINE STOCKS UP IN INSTITUTE REPORT

Gasoline stocks east of California increased 858,000 bbls. during November, according to the revised report of the American Petroleum Institute. This estimate as to stocks is based on 64 per cent of the total operating capacity of the plants located in that section. The following table summarizes the report for the month:

	—Bbls. of 42 Gals.— Increase	Decrease
Domestic crude oil		589,000
Foreign crude	192,000	
Oil for rerunning	160,000	
Gasoline	858,000	
Kerosene		874,000
Gas and fuel oil		2,089,000
Lubricating	66,000	
Miscellaneous		581,000
Total	1,276,000	4,133,000
Deduct		1,276,000
Net increase		2,857,000

FULTON OIL CO. BUYS REFINERY AT COUTTS

CHATHAM, Ont., Dec. 26.—It is announced that the Fulton Oil Co. through its president, William McGinley of Chicago, has acquired the recently completed refining plant of the Maple Leaf Oil & Refining Co. at Coutts, Alta. The Coutts plant has a charging capacity of 2,500 bbls. The Maple Leaf Oil & Refining Co. was organized by a group of Canadians connected with the Queen City Oil Co. of Regina, Sask., which had developed considerable production in the Sunburst Field, and the plant has been in operation for some months. Mr. McGinley was formerly president of the Sterling Oil & Refining Co. of Wichita, and later through the Rice and Fulton Oil Companies, has been interested in crude production in the Montana fields. The Maple Leaf refinery will, it is anticipated, afford an outlet for this production, of which the Fulton Co. now has considerable in storage.

The new interests have purchased two 55,000-bbl. tanks from the Kaw Boiler Works at Kansas City, Mo., one to be erected in the field and the other at Coutts, and a contract has also been let for a 15,000-bbl. underground storage tank for fuel oil at the Coutts refinery. The marketing of the production of the Maple Leaf refinery is to be turned over to the Arro Oil & Refining Co. of Lewiston, Mont. Most of the products will be marketed in Canada, though provision will first be made for the needs of the Arro stations in Montana.

JOBBERS' MEETINGS

The South Dakota Independent Oil Jobbers' Association will hold its annual meeting at the Carpenter Hotel, Sioux Falls, on January 6 and 7.

The Wisconsin Independent Oil Men will hold their annual meeting at the Hotel Pfister on January 11-12. There will be exhibits. The National Petroleum Marketers' Association will be represented by President L. V. Nicholas. Ray Shaw of the Independent Oil Men of America will show the stereopticon views of the advertising compaign.

LOUISIANA GASOLINE TAX

BATON ROUGE, La., Dec. 26.—During the month of October there was a total of $215,957.29 collected in the State of Louisiana, according to the report of the State Supervisor of Funds, W. N. McFarland. This amount represents the tax on 10,829,864 gallons of gasoline.

The total amount collected as gasoline tax this year is $2,131,439.77 on 103,571,988 gallons of gasoline. These figures include the months from January to October.

MOVE TRAFFIC DEPARTMENT

The Skelly Oil Co. announces that effective January 1, 1926, the headquarters of the traffic department will be moved from El Dorado, Kan., to the Skelly Building, Tulsa, Okla.

A. F. Winn, traffic manager, requests that tariff issuing agents make no change in their mailing lists, as the tariff files at El Dorado will be maintained.

MAY ABANDON REFINERY

LONG BEACH, Calif., Dec. 26.—The refinery of the Santa Fe Carbon Co., located just inside the city limits here, may be abandoned as a result of the city ordinance forbidding its operation on the ground that it is objectionable to residents of the vicinity. The Superior Court has held that the City Council may declare any part of the city a residence district and suppress industries.

They Don't Sell Chairs at Lumber Mills

True enough that most chairs are made of wood and that the wood comes from lumber-mills—yet history has yet to record the first time that any lumber-mill held a sale of chairs.

It is at furniture stores, which have nothing to do with the obtaining of wood, where most of the chairs are bought.

Such are the two ends of the well organized commercial chain, which makes it possible for people living thousands of miles from lumber camps to buy chairs at a reasonable price.

The middle links of this chain are the manufacturers and the distributors.

These two save the lumber-mill the hopeless task of trying to sell wood in the form of chairs to dealers or individuals located at the scattered points of the world.

These two save the dealer, selling chairs made from various woods, the delay and risk of buying from as many various lumber-mills.

Much the same condition is true in any commercial enterprise dealing with every-day necessities—for example, the oil business.

Here we find what is known as the oil jobber acting as a quantity buyer for the refineries and as warehouse for the retail outlets.

They save the refiner the costly detail and shipping expense of doing business with innumerable retail outlets.

They save the retail outlets the delay and confusion of ordering from various refineries supplying different kinds and grades of oils.

It is such important economic work that is done by the Acme Petroleum Company.

We buy in huge quantities from refineries—store the oil in large tanks—and operate a fleet of tank cars which are always ready to fill assorted rush orders.

TRY ACME SERVICE TODAY—IT PAYS

(This is the forty-fourth of informatory advertisements on the distribution problems with which the oil industry has to contend.)

ACME

Petroleum Company

Executive Offices: 624 S. Michigan Ave., Chicago

KANSAS CITY, MO. Land Bank Bldg

DALLAS, TEXAS Magnolia Bldg.

OIL STORAGE PLANTS

Over 7,000,000 Gallons Storage

West Tulsa, Okla. Riverdale, Ill.

(Chicago Switching District)

CHICAGO REPORTS FIRM UNDERTONE WITH POSSIBLY HIGHER PRICES

By J. B. Waldo

CHICAGO, Dec. 26.—The Chicago market, according to one of the leading members, was stagnant last week. There was very little business done and little apparent desire to do business. There can be but one chief reason for the latter condition of mind, that the oil trade is not especially worried about the present lack of demand. As a whole, the Chicago men have had a good season, be they refiners, marketers or distributors. There has been money and most of the concerns have increased their operations. They look forward with very considerable optimism to 1926 which to them is full of promise, a better stabilized industry and a large business at it is hoped profitable prices. The consumption of petroleum products is proceeding at a good rate, materially larger than a year ago. This may not be indicated in the current buying of gasoline in the spot market, for example, but with refineries operating at the rate now reported the mere fact that stocks in the Mid-Continent Field are as light as they are stated to be shows there is a very positive and large scale consumption.

There has undoubtedly been a great change in the methods through which the distribution is accomplished. One of the changes of recent years has been the growth of the integrated companies and the marginal contracts system. Both of these promise to increase. Of course, there will always be business for the marketer but more and more the distributor will cease to rely on his spot purchases and will contract for his supplies. The proof of the value of the system is seen in the large number of contracts made for 1926 when the early prediction was there would be few contracts made for next year.

It is almost the case that what is sold at spot prices in the spot market is the surplus of gasoline over contract requirements. Refiners are most careful regarding the accumulation of large stocks. There has been very little gasoline sold for immediate delivery in this market during the week. Jobbers have been almost a unit in stating they should not buy until after the first of the year. What demand there has been has been for the U. S. Motors grade chiefly, the sales of the higher gravities not being important and occasionally a marketer has had to hunt for a buyer for even a car or two of these. Prices are just about where they were a week ago. The U. S. Motors grade is selling at 9¼ to 10 cents with the bulk placed at the former figure. This has been caused chiefly by the usual end of the month desire of those with gasoline bought for December to close out their contracts. There have not been any free offerings of gasoline by refiners and it is doubtful if any considerable quantity could be bought from refiners at the prices named for resale, in a few cases of 9½ cents to the marketer. Many refiners have refused to quote for January and for December have asked the buyers 10 cents and others 9¾ cents. In fact, there has been no pressure to sell evidenced from any source except a few marketers and a little refiners' gasoline that was rolling, very little of this. There has been some inquiry for export and a little buying has been done. A large eastern oil company has been quietly picking up cars when it could for shipment to Ohio points to replenish its tanks but it is understood there is no great success met with in buying at the desired price. Natural gasoline has been rather easy for the best grade and more active and stronger for the C grade and the spread between the A and the C grades is decreased. There is a firm undertone to the market and the prediction is freely made that if there is any quantity buying done right after the opening of the year, there will be an immediate response in the shape of higher prices, without a tank wagon or crude advance. If crude is advanced, then the market will move right along the whole line. But it is uncertain work trying to predict what the gasoline market will or will not do.

Kerosene Firm

Kerosene continues firm and the demand is active both for export and for domestic consumption. The quantities ordered to the jobbers during the week have not been large as they are holding back their kerosene as well as their gasoline orders but there has been a steady outgo and the refiners claim they are behind in their shipments in several cases but usually they have either export orders or distribution of their own. But stocks are not large, judged by offerings and by deliveries, and the prices both at the refinery and to the trade are firm and unchanged, showing the situation to be very good in this product.

Furnace Oils

Furnace oils have also been in a little better demand. There have been some days of really low temperature but not until late in the week. The consumption is showing a seasonable increase, according to the records of leading distributors. The great majority of the domestic oil burners are thermostatically controlled and the quantity of furnace oil consumed is regulated by the temperature so that the consumption of furnace oil is a weather record of itself. The recent accumulations of furnace and fuel oils in the freight yards here have been pretty much absorbed. The market is strong, although there have been no real changes in prices. There is a sufficient surplus available beyond the requirements of contract customers to meet the needs of the jobbers who buy their supplies in part or wholly in the spot market and this condition may prevail for some time and then a continued cold snap may bring a flood of orders. Generally jobbers who have much business in furnace oils are carrying sizable stocks for such an emergency. Gas oil continues to be bought for fuel for domestic burners and the demand is quite active. Local distributors are keeping pretty busy and they look forward to the next two months as sure to break the record of consumption of oil by the local users of oil burners.

Gas Oil Active

Gas oil has been about as active in demand as any petroleum product. There are so many classes of users of this oil from the refiner who cracks it to the householder who burns it in his basement often under the idea that he is burning heavy fuel oil, that being the kind of oil he understands his heater uses. But the oil man, wiser than the home owner, and in some cases than the burner manufacturer, furnishes gas oil that he knows will give service even in the coldest weather. Some considerable sales have been reported to refiners and to gas companies but the utility companies as a rule are using their contract supplies and a gas company order in the spot market is not common. The market is generally quoted as 3½ to 3¾ cents but several refiners are asking one-eighth cent more and claim the 3½-cent oil is not of the quality that makes it useful to any but very large consumers such as gas companies and cracking stills.

Fuel Oil

Fuel oil has not moved in a large way this week, although business is being done right along and the present cold snap is expected to increase the demand. Some of the dealers in fuel oil who have been rather insistent in their idea that prices were too high and not justified by the demand say that even such weather as was ushered in yesterday will have little influence on the market, that the consumers will only burn a little more oil and that the increase in the consumption will not be very noticeable. In the

coal industry a cold snap always means a better demand of which dealers have been accustomed to take advantage by increasing prices. Each individual user may use only a little more oil but the aggregate of thousands of users will be a decided increase in the quantity of fuel oil consumed. Many oil users have been letting their stocks run low, the inventory period applying to fuel oil as well as to all materials used in their business, and an increased consumption may bring a common demand from many buyers for moderate quantities.

Leading coal operators in Chicago still profess to be unworried by the competition from the oil burner. They assert they are selling as much coal as ever and this may be true for the number of new buildings is so large and the population is growing so rapidly it is possible the coal men are doing an average business, simply failing to secure the increase they would secure otherwise. A prominent coal dealer and mine owner stated this week that he was assured "by an executive of the Standard Oil Co." that within five years there would be no oil burners as the development of the cracking prices made fuel oil too valuable to be burned as fuel. This is no new idea and quite a number of oil men agree to an extent with the theory but until the time comes when the entire content of the barrel of crude can be refined into something which will sell at a higher price than fuel oil, there will be some residual oils available although the cost of these oils may be so great as to prohibit their general use.

The market for fuel oil continued to be rather uninteresting during the week. There are only a limited number of inquiries for large quantities. A contract or two for periods over a considerable part of 1926 have been settled and the prices obtained seemed, under present conditions, to be very fair prices for both seller and buyer. Of course, present conditions must be the basis as any contracts made on imagined future conditions would be the rankest speculation. The users of fuel oil are largely drawing on contracts and as these contracts are more favorable in almost every instance than the present spot market they are not buying additional quantities. The refinery markets have shown no change in price but have been firmly held and there have been almost no offers of any sizeable quantities of fuel oil for even immediate shipment at any concession in price. Some refiners have offered their oil with considerable freedom but always at the market and the local sellers have not known where to place the oil so they have not bought.

The report of the A. P. I. for November rather surprised some in the trade with its large decrease of fuel and gas oil which showed that somewhere the oils had been moving more freely than was thought by the tank car distributors. There has been considerable consumption and while buyers of fuel oil may believe that prices are too high, be he a consumer or a distributor, still they do seem to stick. Right now there is little oil available except the 18-22 fuel oil and Smackover. The 24-26 and the higher gravities are scarce. Some are not quoting any 24-26 to their customers. One contract was signed last week for a 20-26 oil and the seller said he should try and deliver a 24 fuel oil but that if he could not he would be protected and the specifications as to flow, heat units and other qualities would be rigidly carried out so what did it matter to the buyer just what the gravity was, he would always get a satisfactory working oil which he might not get in a straight 24-26 refinery fuel oil. Smackover continues to be freely offered but in some cases there has been complaint by users of the quality of the oil delivered. Some of the pit oil is rather under the grade.

Lubs Unchanged

Lubricating oils are firm but unchanged and not active now. The outlook is for a large demand after the opening of the year for motor oils from refiners. Quite a number of contracts have been closed with compounders and jobbers who compound their own oils and some of the refiners are pleased with the advance business done. The industrial demand is fair and the spot demand for motor oils is light.

Tank Wagon Evened Up

Tank wagon prices are being evened up all along the line even at Decatur, Ill., which was a very weak spot, the market has been placed at normal by the Standard and Independent distributors. The trade is now setting back waiting for an advance in the tank wagon market and wondering why crude does not advance. It would be a very complete surprise if the tank wagon were increased without a crude advance so most here are waiting for better assurance of a crude advance. The contracts this year are of a nature that gives the jobber a wider option if a lesser margin. Yet the tank wagon price is really the base of the contracts. Recent changes in its prices by the Standard Oil Co. of Indiana have been based on crude advances but have followed so quickly the change has been almost simultaneous. One hears very little complaint from jobbers regarding the gallonage and it is stated it is fair for the season. Most of them are quite busy with their furnace oil business and this will take a spurt with the present cold weather. The Standard Oil Co. of Indiana has stated, not officially, of course, that the contract system involving a discount for quantity purchases was working out successfully and that it was signing up contracts right now for 12 months in advance disproving the statement that the system was not working satisfactorily and would be abandoned very shortly. The company worked over this idea for months before it put it into effect last July and professes to be satisfied.

EASTERN MARKETERS FEEL CAUTION NOW MEANS BIG PROSPERITY LATER

By N. O. Fanning

NEW YORK, Dec. 26.—The advance of 2 cents per gallon in the tank wagon price of gasoline in southern California, put into effect December 22 by the Standard Oil Co., offset any possible effect on sentiment in this territory which the warning issued by "The Lamp" against price increases might have had. In certain quarters local marketers had been turning somewhat more cautious as a result of larger receipts of tank car gasoline in the East, but the advance in the California price is looked upon as a reliable indicator of the trend on the Atlantic Seaboard.

It is apparent, however, that the principal eastern marketers of gasoline are maintaining a cautious attitude, so far as the gasoline market is concerned. There have been many advances in gasoline tank wagon prices during the past month, including those in the territories of the Standard Oil Co. of Indiana, Standard Oil Co. of Ohio, Standard Oil Co. of Louisiana and Standard Oil Co. of California. Yet neither Standard of New York, New Jersey nor Atlantic Refining have lifted prices.

The belief is held in high oil circles in the east that too much optimism at this time would probably lead to overproduction again in 1926, and on the other hand it is maintained that caution will be rewarded by a more healthy situation throughout the coming year.

While there is considerable bulk gasoline available here it is obtainable only in small scattered lots, and is not being dumped wholesale on the market. The larger refiners are not offering spot gasoline freely. Many smaller retailers in fact have been unable to renew contracts for gasoline which they had held for 1925 and find trouble in making satisfactory arrangement for 1926. Refiners are unwilling to make large commitments at current prices, believing a higher market probable in 1926. Furthermore, the larger refiners are understood to be practically sold out for 1926, allowing, of course, for their own retail requirements.

Refiners Speed Up

Atlantic Coast refiners are understood to be speeding up operations somewhat. The two products which are the chief aim of these operations are gasoline and fuel oil. The demand for fuel oil is breaking all records. Gasoline stocks are, of course, increasing as a result of running more crude, but not to an alarming extent.

In fact it is the understanding that a larger percentage of heavy oil is now being run, which has a comparatively small gasoline yield. Heavy California oil, Mexican oil and Smackover heavy are the principal grades being used.

On the other hand Atlantic Coast refiners are understood to have made arrangemants to take a much larger amount of high grade oil after the first of the year, to be delivered by tanker and pipe line. This includes largely high grade Mid-Continent crude.

The effect of this may be beneficial to the Mid-Continent Field, especially to the purchasing companies which have been gradually piling up stocks for some years. It will all have the result, sooner or later, of advancing the price of Mid-Continent crude, although when this will come is a matter of speculation.

Kerosene Market Firm

The eastern kerosene market continues firm, with prices now believed to be at the peak. Foreign demand is brisk, but the domestic demand is not more than normal. It is believed, however, that export prices are somewhat low as related to the domestic market.

Furnace Oil

The market for furnace oil continues strong, with prices unchanged. Many new buildings, if not most, are oil burners, so far as the principal eastern cities are concerned.

Gas and Fuel Oil

Gas oil is quiet and unchanged in price. Bunker oil is in good demand, with some business reported at slightly above $1.65 per barrel. Indications are for a higher market.

Lubricants Firm

The lubricating oil market shows unmistakable signs of revival. Demand from domestic industrial sources is taking on new life and covers cylinder oils, reds and pales. Prices of these products are believed now to be on the bottom.

The recent advances in Pennsylvania crude oil prices have imparted strength to cylinder oils here. Red and pale oils have recently shown consistent weakness, but this was due partly to "dumping" of considerable Texas oils on the market, according to reports in the trade. Marketers of red and pale oils are very poorly supplied, and the improved demand for these grades augurs well for the future of the market over the next few months.

The paraffin wax market is stronger, due largely to increased export demand and the improvement in domestic industrial consumption. Christmas demand for wax has also been very good this year.

Petrolatum

Petrolatum market continues somewhat dull. Prices are unchanged, ranging from 3¾ cents per pound for amber to 10 cents for snow white, in carload lots.

The Export Market

Lubricating oils and wax feature the export market, as a result of heavy inquiries from foreign distributors, who are now apparently low as to stocks on hand.

The current movement of both products was particularly heavy during the past week. This is partly due to the belated effort to cover contracts for 1925 delivery.

Shipments of lubricating oils in barrels during the past week are reported at 2,646,400 gallons, while case shipments were 411,790 gallons, a total of 3,058,190 gallons.

Lubricating grease exports in barrels during the week aggregated approximately 1,306,800 pounds, which went in one consignment to east African ports.

Shipments of refined paraffin wax were unusually heavy, aggregating 3,699,080 pounds. As usual, Italy and Spain were large buyers of this wax, but France and Belgium also took rather liberal quantities.

The following table shows principal exports of petroleum and petroleum products from New York during the past three weeks, (figures in gallons unless otherwise noted in parenthesis):

	Week Ended		
Gasoline—	Dec. 23	Dec. 16	Dec. 9
Bulk	2,115,972	3,710,701	.....
Cases	2,918,060	1,028,500	1,069,340
Kerosene—			
Bulk	3,513,048	1,542,581	.....
Cases	5,133,380	1,493,490	611,500
Turpentine substitute—			
Bulk	136,233	.....	.....
Lubricating oil—			
Barrels	2,646,400	485,000	539,850
Cases	411,790	38,690	53,050
Paraffin wax—			
Bags (lbs.)	3,699,080	1,321,320	675,400
Barrels (lbs.)	.....	712,500	.....
Lubricating grease—			
Barrels (lbs.)	1,306,800	584,100	.....
Crude oil—			
Barrels	43,800	.....	313,200

The above figures include exports in lots of 500 bbls. or 1,000 cases, or more.

Tanker Chartering Market

A further sharp upturn in tanker chartering rates took place during the past week.

The fixture of the shipping board tanker Baldbutte from United States Gulf to New York at 28 cents per barrel, or from Tampico to New York at 33 cents, marks the high point on the present upward movement. These rates are from 10 to 15 cents higher than those prevailing last fall, when rates were at rock bottom.

Oil Receipts Lower

Estimated receipts of crude and refined petroleum at Atlantic Coast ports by water averaged 399,000 bbls. daily during the week ended December 23, compared with 395,000 bbls. the preceding week, a gain of 4,000 bbls.

Receipts from the Gulf Coast averaged 280,000 bbls. daily, an increase of 68,000 bbls. over the preceding week.

Pacific Coast receipts average only 17,000 bbls. daily, consisting of only one cargo of 199,000 bbls. arriving at Philadelphia.

Atlantic Coast Receipts

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the past three weeks; also monthly record for the past 12 months, (figures in barrels):

	Week Ended		
	Dec. 23	Dec. 16	Dec. 9
Gulf Coast	280,000	212,000	326,000
Pacific Coast	17,000	82,000	59,000
Imports	102,000	101,000	92,000
Total	399,00	395,000	477,000

Daily Averages By Months				
1925—	Gulf	Pacific	Imports	Total
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000
May	312,000	81,000	145,000	538,000
April	353,000	78,000	101,000	532,000
March	273,000	82,000	135,000	490,000
February	262,000	51,000	147,000	460,000
January	311,000	77,000	133,000	521,000
1924—				
December	306,000	83,000	85,000	474,000

The foregoing estimates are based upon the carrying capacity of incoming oil-laden tankers.

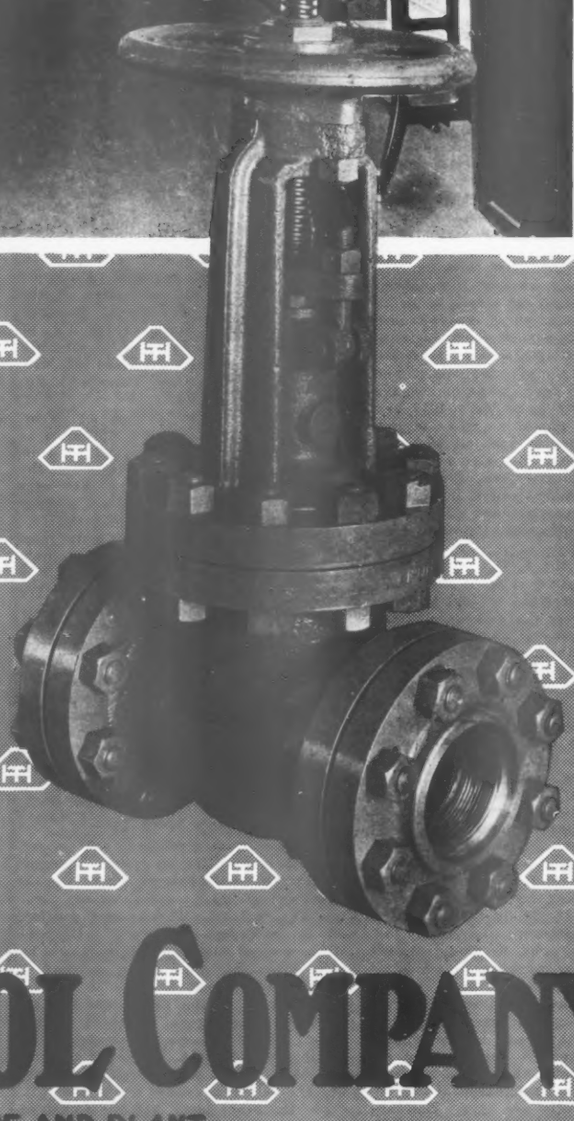
SUPERINTENDENTS MEET

A meeting of executives and department heads of the Prairie Oil & Gas Co. was held in Tulsa Monday for the purpose of making plans for field operations the coming year. The meeting was attended by Nelson K. Moody, president; Dana H. Kelsey, vice president and general manager; Fred S. Cook, superintendent of the land department, and Joseph S. Sidwell, Horace C. Fitzpatrick and W. B. Sutton of the land department; J. W. Smith, production superintendent in Kansas; John A. Wolf, in Oklahoma; J. F. Champion, in Kansas; A. G. Dana, in Wyoming; Ray I. Short, in charge of natural gasoline manufacture in Oklahoma; O. (Red) Neal, in Texas; W. G. Clute, chief accountant, and S. J. Fraser, assistant to Mr. Clute.

Metallurgical Laboratory where steel for

HUGHES VALVES

is examined microscopically.



HUGHES TOOL COMPANY

Branch Plants
LOS ANGELES, CALIF.
OKLAHOMA CITY, OKLA.

MAIN OFFICE AND PLANT
HOUSTON, TEXAS

Export Office
NEW YORK CITY, N.Y.

Brief Items for Plant Operators

STILL AT GASOLINE PLANT REPLACES STEAM EQUIPMENT

Taking the place of four 60 h.p. boilers and two steam stills the Henderson Co., manufacturer of natural gasoline, now has in operation a fire still which is producing approximately 11,000 gallons of gasoline daily. The equipment, which is shown in the accompanying diagram and photo taken at the plant last week, a few days after the start of operations, is known as the Gilmore Improved Fire Still.

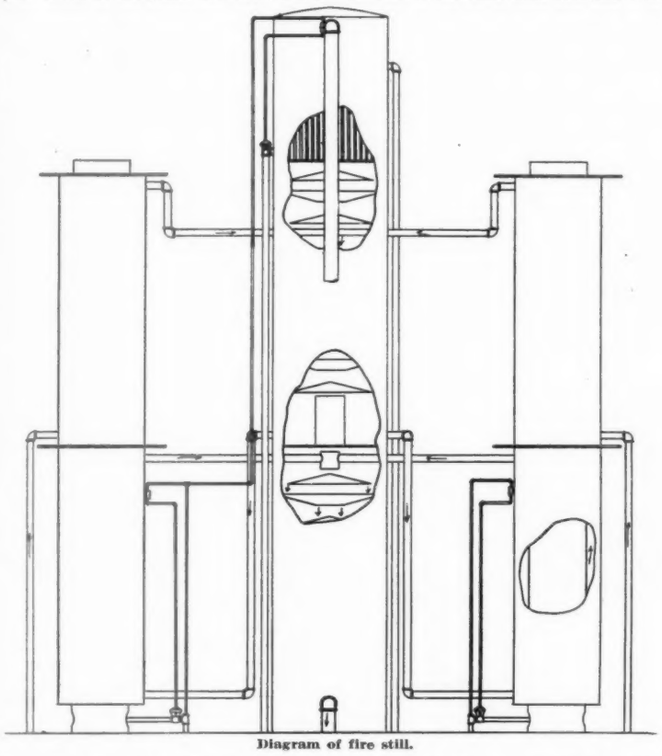


Diagram of fire still.

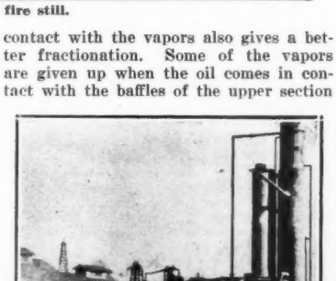
The still represents the latest in Gilmore design for the handling of saturated absorbent oil with a fire still. Greater savings in fuel and more efficient fractionation is claimed for the still.

The still consists of two preheaters operated with the one evaporator, the complete still having a rated capacity of 10,000 gallons daily. One preheater can be operated with the evaporator, giving a capacity of 5,000 gallons daily. The diagram shows the flow of the oil through the preheaters and evaporator.

The rich oil first enters the upper section of the preheater, which is 34 feet high. This preheater has a 3-inch hollow wall through which the oil passes, both in the lower and upper sections. Leaving the upper section, the oil passes to the upper section of the evaporator, which is 48 inches in diameter and 40 feet high. After passing over the baffles the oil drops back to the lower section of the preheater, a 10-inch nipple 4 feet high preventing the oil from passing to the lower section of the evaporator. After passing around the lower section of the preheater the oil goes to the bottom section of the evaporator, where it again comes in contact with the baffles, finally passing out at the bottom as denuded oil. The two preheaters are exactly the same. From the knock-out the vapors pass through an aerial condenser to the water condenser.

It is apparent that several desirable operating features are accomplished with a still of this design. In the first place it is claimed that the vertical heating surface of the preheaters gives a more efficient heat transfer than the horizontal type when used with rich absorbing oil.

The manner of gradually heating the oil and at the same time bringing it into contact with the vapors also gives a better fractionation. Some of the vapors are given up when the oil comes in contact with the baffles of the upper section



Improved fire still in operation at El Dorado, Ark., plant of the Henderson Co.

of the evaporator. Through the two-section arrangement of this evaporator or tower the liquid also comes in contact with the vapors from the lower section when the oil reaches its maximum temperature. This serves the double purpose

(Continued on Page 182)

WESTERN REFINERS PLAN TECHNICAL PROGRAM

The manufacturing committee of the Western Petroleum Refiners' Association will meet at the Tulsa headquarters of the association January 4 to prepare a technical program for the annual meeting to be held at Fort Worth, Tex., March 2, 3 and 4. Discussion of technical developments concerned with refining will have a prominent place in the association's three-day convention.

That feature of the program was well received at the Kansas City convention last year and still greater interest is expected this year. The committee plans to have several addresses by widely-known authorities with informal discussions in which all present will take part.

NEW BALTIMORE PLANT TO MAKE STELLARINE

The Interocean Oil Co. is building a cracking plant at Baltimore, Md., which, when completed, will make 1,000 bbls. a day of anti-knock gasoline from gas oil.

The new product will be stellarine, the process the invention of William G. Leamon, who has licensed his process to the Interocean Co. The new fuel is said by the inventor to have a fuel value equal to a product of 50-50 blend of gasoline and benzol. The plant is expected to be in operation about the first of March.

TO USE SILICA GEL IN LOWERING COSTS

Silica gel is to have a more widespread use in the refining industry and will be an important factor in lowering treating costs, according to W. A. Patrick, professor of chemistry at Johns Hopkins University. Doctor Patrick is credited with inventing the product during the World War.

The silica gel is being used at the Paulsboro, N. J., plant of the Vacuum Oil Co. It is made with water glass and acids. It forms a substance which resembles coarse sand, but contain innumerable pores so fine that they cannot be seen even under the highest powered microscope. From the absorbent qualities of the substance Doctor Patrick estimates that the surface of these pores in one gram of silica gel would cover half an acre. Its action is not chemical. The width of the pores, he estimated, is even less than a wave length of light. Its action depends on the capillary attraction of the fine tubes which ramify it.

Doctor Patrick said the new product would also make it possible to obtain gasoline from natural gas at slight expense and benzine from coke oven gas. These uses by no means exhaust its possibilities, he said.

In refining petroleum, he said, it has been found that the uses of silica gel in removing sulphur bearing constitutents and gum forming compounds is a cheaper and more efficient method than any yet devised. These are either distilled out of the silica gel and recaptured or burned out, the gel remaining uninjured.

Recent Patents

1,564,501. Method of Manufacturing Lubricating Oils. James W. Weir, Fillmore, Calif., assignor of one-half to John C. Black, Destrehan, La. Filed March 21, 1922. Serial No. 545,538. Three claims. (Cl. 196—147.)

1. The method of refining lubricating oil stocks, which comprises treating the oil with sulphuric acid, settling and removing the major portion of the sludge, then adding a comminuted solid absorbent material, heating the mixture to a temperature sufficient to decompose the remaining sludge and liberate sulphur dioxide therefrom, and separating the adsorbent material with the matters adsorbed thereon from the oil stock.

341 O. G.—26.

AMONG THE TECHNICAL MEN

A. G. Page, manager of refineries for the Union Oil Co. of California, is a native of Madison, Ind., and received his elementary education at the Evansville, Ind., high school. Migrating to California at an early age, he became associated with the Coronado Water Co., in the position of assistant manager. Resigning from this post, Mr. Page resumed studies at Stanford University, from which he graduated with the degree of A.B. Then followed a year at Mount Tamalpais Military College where he taught physics and chemistry.

A. G. Page

Having pronounced leaning towards chemistry, Mr. Page became associated with the Berkeley Chemical Co. in 1903 as chemist, later succeeding to the position of superintendent. The year 1907 found him as chemist with the Leona Chemical Co. in Oakland where his mechanical and scientific knowledge found vent in the construction of the plants for the manufacture of aluminum sulphate and nitric acid.

Severing his connection with this company in 1913, Mr. Page became associated with the Union Oil Co. as chemist. His work in that capacity warranted his rapid promotion to the position of assistant superintendent. Four years later he was appointed superintendent at Oleum refinery, graduating to the position as superintendent of refineries in March, 1920, when he transferred his office to Los Angeles.

In September, 1922, he was appointed manager of refineries, his present position.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Dec. 29		Dec. 22		Dec. 15	
50-52 450 end point	.09		.08¾	.09	.09	.09¼
56-58 450 end point	.09¼	.09½	.09¼	.09½	.09½	.09⅝
58-60 437 end point (U. S. Motor)	.09½	.09¾	.09½	.09¾	.09⅞	.10
60-62 400 end point	.11	.11¼	.11	.11¼	.11⅜	.11⅝
64-66 375 end point	.12	.12¼	.12¼	.12½	.12⅜	.12½
68-70 350 end point	.13¼	.13½	.13	.13½	.13¼	.13½
KANSAS—						
58-60 437 end point (U. S. Motor)	.10	.10¼	.10	.10¼	.10¼	.10½
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.08½	.08¾	.08½	.08¾	.08¾	.09
50-52 440 end point (Naphtha)	.08⅝	.08⅞	.08⅝	.08⅞	.09	.09¼
56-58 450 end point	.09	.09¼	.09⅛	.09½	.09½	
58-60 437 end point (U. S. Motor)	.09½	.09⅝	.09½	.09⅝	.09⅞	.10
60-62 400 end point	.10¾	.11	.10⅞	.11	.11¼	.11½
64-66 390 end point	.11¾	.12	.11¾	.12	.12¼	.12½
64-66 375 end point	.12	.12¼	.12	.12¼	.12½	.12¾
68-70 360 end point	.12¾	.13	.12⅞	.13¼	.13	.13¼
NORTH LOUISIANA—						
56-58 450 end point	.09½	.09¾	.09¾	.10	.10	.10¼
58-60 437 end point (U. S. Motor)	.09¾	.10	.10	.10¼	.10¼	.10½
60-62 400 end point	.11¼	.11½	.11½	.11¾	.11¾	.12
64-66 390 end point	.12¼	.12½	.12¼	.12½	.12¼	.12½
64-66 375 end point	.12½	.12¾	.12½	.12¾	.12½	.12¾
ARKANSAS—						
58-60 450 end point	.09½	.09¾	.09¾	.10	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10		.10	.10¼	.10½	.10¾
64-66 375 end point	.12¼	.12½	.12½	.12¾	.12½	.12¾
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12½	.12¾	.12½	.12¾	.13	.13¼
PENNSYLVANIA—						
52 Naphtha	.11¼	.11½	.11¼	.11½	.11¼	.11½
54 Naphtha	.11½	.12	.11½	.12	.11½	.12
56 Naphtha	.12	.12¼	.12	.12¼	.12	.12¼
58 Naphtha	.12⅝	.12¾	.12⅝	.12¾	.12½	.12¾
60 Gasoline	.13½	.13¾	.13½	.13¾	.13½	.13¾
62 Gasoline	.14	.14½	.14	.14½	.14	.14½
64 Gasoline	.15¼	.15½	.15¼	.15½	.15¼	.15½
66 Gasoline	.16¼	.16½	.16¼	.16½	.16¼	.16½
68-70 Gasoline	.20	.20½	.20	.20½	.20	.20½
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.11	.11½	.09	.09½	.09	.09½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09		.09	.09¼	.09¼	.09½
56-58 450 end point	.09¼	.09½	.09½		.09½	.09⅝
58-60 437 end point (U. S. Motor)	.09½	.10	.09⅝	.10	.10	.10⅛
60-62 400 end point	.11	.11¼	.11¼	.11½	.11½	
64-66 375 end point	.12¼	.12½	.12½	.12⅝	.12½	.12¾
68-70 360 end point	.13¼	.13½	.13¼	.13½	.13¼	.13½

*Colorado points.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Dec. 29		Dec. 22		Dec. 15	
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¾		.10¾		.10¾	.11
Grade A, 72-79.9, 375 end point, rec. 90%	.10¾		.10¾		.10¾	.11
Grade Double B, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10	.10¼	.10¼	
Grade B, 76-83.9, 375 end point, rec. 85%	.10	.10¼	.10	.10¼	.10¼	
Grade C, 80-90, 375 end point, rec. 78%	.09½	.09¾	.09½	.09¾	.09½	
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¾	.11	.10¾	.11	.11	
Grade A, 72-79.9, 375 end point, rec. 90%	.10¾	.11	.10¾	.11	.11	
Grade Double B, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10	.10¼	.10¼	.10½
Grade B, 76-83.9, 375 end point, rec. 85%	.10	.10¼	.10	.10¼	.10¼	.10½
Grade C, 80-90, 375 end point, rec. 78%	.09¾		.09½	.09¾	.09½	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%	.11¼	.11½	.11⅜	.12	.11⅜	.12
Grade B, 76-83.9, 375 end point, rec. 85%	.10¾	.11	.11¼	.11½	.11¼	.11½
Grade C, 80-90, 375 end point, rec. 78%	.09¾	.10	.10½		.10¼	.10½
CALIFORNIA—						
78-85 absorption, 360-390 end point	.15	.15½	.13	.13½	.13	.13½
78-84 compression, 350 end point	.15	.15½	.13	.13½	.13	.13½
CHICAGO DISTRICT (Based on Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10¾	.11	.11	.11¼	.11	.11¼
Grade A, 72-79.9, 375 end point, rec. 90%	.10¾	.11	.11	.11¼	.11	.11¼
Grade Double B, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10¼	.10½	.10¼	.10½
Grade B, 76-83.9, 375 end point, rec. 85%	.10	.10¼	.10¼	.10½	.10¼	.10½
Grade C, 80-90, 375 end point, rec. 78%	.09½	.09¾	.09½	.09¾	.09¼	.09½

MOTOR NATURAL GASOLINE (BLENDS)

OKLAHOMA (Group 3)—	Dec. 29		Dec. 22		Dec. 15	
60-62 450 end point	.09½	.09¾	.09½	.09¾	.09¾	.10
64-66 437 end point	.10¼		.10¼		.10¼	.10½
68-70 430-435 end point	.10½		.10½		.10½	.10¾
NORTH TEXAS—						
58-60 450 end point	.09⅜	.09½	.09⅜	.09½	.09½	.09¾
PENNSYLVANIA—						
*60-62	.13½	.13¾	.13½	.13¾	.13½	.13¾
*64-66	.13¾	.14	.13¾	.14	.13¾	.14
*66-68	.13¾	.14	.13¾	.14	.13¾	.14
*68-70	.14	.14½	.14	.14½	.14	.14½
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.09¾	.10	.09¾	.10	.09¾	.10
64-66 437 end point	.10¼	.10½	.10¼	.10½	.10½	.10¾

*At Sistersville, W. Va.

BURNING OILS

KANSAS—	Dec. 29		Dec. 22		Dec. 15	
41-43 water white Kerosene	.05½	.05⅝	.05¼	.05½	.05¼	.05½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.05⅛	.05¼	.05	.05⅛	.05	.05¼
42-44 water white Kerosene	.05⅜	.05⅝	.05⅜	.05½	.05½	
40-41 prime white Kerosene	.05	.05⅛	.04⅞	.05	.04⅞	.05
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05¾	.06	.05½	.05¾	.05½	.05¾
42-44 water white Kerosene	.05¾	.06	.05¾	.06	.05¾	.06
ROCKY MOUNTAIN STATES—						
*40-44 water white Kerosene	.08	.08⅛	.08	.08⅛	.08	.08⅛
NORTH TEXAS—						
41-43 water white Kerosene	.05¼	.05½	.05¾	.05½	.05⅝	.05¾
40-42 prime white Kerosene	.05	.05⅛	.05	.05⅛	.05	.05⅛
41-43 prime white Kerosene	.05¼	.05½	.05¼	.05½	.05¼	.05½
42-44 water white Kerosene	.05½	.05¾	.05½	.05¾	.05½	.05¾
ARKANSAS—						
41-43 water white Kerosene	.05¾	.05⅞	.05¾	.05⅞	.05¾	.05⅞
42-44 water white Kerosene	.06		.06		.06	
PENNSYLVANIA—						
43 Kerosene prime white	.07¼	.07½	.07¼	.07½	.07¼	.07½
45 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
46 Kerosene water white	.08	.08½	.08	.08½	.08	.08½
47 Kerosene water white	.08¾	.09	.08¾	.09	.08¾	.09
34 Neutral	.07¾	.08	.07¾	.08	.07¼	.07½
34 Sundebloom Neutral	.08¾	.09	.08¾	.09	.08	.09
36 Miners' Neutral	.07	.07¼	.07	.07¼	.06¾	.07
300 Mineral Seal	.07¾	.08	.07¾	.08	.07¾	.08
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.06½	.07	.06½	.07	.06½	.07
Engine distillate, 42-44 450 end point	.06¼	.06½	.06¼	.06½	.06¼	.06½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.05⅛	.05¼	.05⅛	.05¼	.05⅛	.05¼
42-44 water white Kerosene	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝

*Colorado points.

FUEL OILS

KANSAS—	Dec. 29		Dec. 22		Dec. 15	
24-26 Fuel Oil	1.35	1.45	1.35	1.45	1.40	1.50
32-36 Gas Oil	.04	.04⅛	.03¾	.04	.03¾	.03⅞
38-40 Distillate	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.22½	1.25	1.22½	1.25	1.22½	1.25
22-26 Fuel Oil (sellers' cars)	1.25	1.27½	1.25		1.25	
24-26 Fuel Oil (buyers' cars)	1.25	1.30	1.25	1.30	1.25	1.30
24-26 Fuel Oil (sellers' cars)	1.27½	1.30	1.25	1.30	1.25	1.30
28-30 Fuel Oil (sellers' cars)	1.35	1.40	1.35	1.40	1.35	1.40
32-36 Gas Oil (dark)	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
32-36 Gas Oil (light)	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
36-38 Distillate	.04		.03⅞	.04	.03⅞	.04
38-40 Straw Distillate	.04	.04⅛	.04	.04⅛	.04	.04⅛
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.45	1.50	1.55	1.65	1.55	1.65
26-30 Fuel Oil	1.65	1.70	1.75	1.80	1.75	1.80
32-36 Gas Oil (dark)	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03¾
32-36 Gas Oil (light)	.03⅞	.04	.03⅞	.04	.03⅞	.04
38-40 Straw Distillate	.04	.04⅛	.04	.04⅛	.04	.04⅛
NORTH LOUISIANA—						
18-20 Fuel Oil	1.05	1.10	1.05	1.10	1.05	1.10
32-36 Gas Oil	.03¾	.04	.03¾	.04	.03½	.03¾
ARKANSAS—						
38-40 Distillate	.04¼	.04¼	.04	.04¼	.04	.04¼
32-36 Gas Oil	.03⅞	.04	.03¾	.04	.03⅝	.03¾
22-26 Refinery Fuel Oil	1.25		1.25		1.25	
GULF COAST (South Texas)—						
Gas Oil	.04¾	.05	.04¾	.05	.04½	.04¾
Fuel Oil	1.50	1.55	1.50	1.55	1.50	1.60
PENNSYLVANIA—						
30-34 Fuel Oil	.05½	.05¾	.05½	.05¾	.05½	.05¾
36-40 Fuel Oil	.06	.06¼	.06	.06¼	.06	.06¼
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-35 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tidewater)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel Oil	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.25	1.30	1.30	1.35	1.30	1.35
18-22 (El Dorado)	1.25	1.30	1.25	1.30	1.25	1.30
18-20 (Smackover)	1.02½	1.05	1.02½	1.05	1.00	1.05
32-36 Gas Oil	.03⅝	.03¾	.03½	.03¾	.03⅝	.03¾
36-38 Distillate	.02⅞	.04⅛	.03⅞	.04	.03⅞	.04
38-40 Straw Distillate	.04⅛	.04⅜	.04	.04⅛	.04	.04¼

LUBRICATING OILS AND WAX

OKLAHOMA (Group 3)—	Dec. 29		Dec. 22		Dec. 15	
70-80 vis., 2½ color, 20-25 cold test	.05	.05¼	.05	.05¼	.05	.05¼
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
150 vis., 3 color, 20-25 cold test	.08½	.09	.08½	.09	.08½	.09
150 vis., 4 color, 20-25 cold test	.08¼	.08¾	.08¾	.08¾	.08¼	.08¾
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 3 color, 23-28 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
200 vis., 3 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
200 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
220 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
220 vis., 4 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
240 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15¼	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.08¾	.09¼	.08¾	.09¼	.08¾	.09¼
180 vis., 6 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 6 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
220 vis., 5 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

220 vis., 6 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 6 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
180-200 vis., S. R. green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
190-200 vis., S. R. green, 40-45 cold test	.07	.07½	.07	.07½	.07	.07½
170-190 dark green, 40-45 cold test	.05½	.06	.05½	.06	.05½	.06
600, steam refined	.06	.08	.06	.08	.06	.08
190-200 vis. @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35
200-210 vis. @ 210 "E" Bright Stock	.30		.30		.30	
150 vis. @ 210 "E" Bright Stock	.27		.27		.27	
150 vis. @ 210 "D" Bright Stock	.28		.28		.28	
Waxes:						
124-126 White Crude Scale Wax	.05	.05¼	.05¼	.05½	.05½	
PENNSYLVANIA—						
150, 3 color	.19½		.19½		.18¾	
180, 3 color	.22¾		.22¾		.22½	
200, 3 color	.25¼		.25¼		.25	
220, 3 color	.28		.28		.27½	
600, steam refined	.19¼		.19		.18	
635, steam refined	.22		.22		.22	
650, steam refined	.24½		.24		.24	
600, Pennsylvania flash	.27		.27		.27	
630, Pennsylvania flash	.35		.35		.35	
*550, E filtered	.20		.19½		.19½	
600, E filtered	.22		.21½		.21½	
*600, E filtered	.23		.22½		.22½	
600, D filtered	.26		.26		.26	
550, E filtered	.19		.19		.19	
550, D filtered	.22½		.22½		.22½	
Pennsylvania Bright Stock	.39½		.39½		.39½	
122-124 White Crude Scale Wax	.05½		.05⅝	.05¾	.05⅞	.06
†124-126 White Crude Scale Wax	.05⅝	.06	.05¾	.06	.06	.06¼

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07	.08	.07	.08	.07	.08
No. 2½ color, 150 vis., pale oil	.09½	.10	.09½	.10	.09½	.10
No. 3 color, 200 vis., pale oil	.12	.12½	.12	.12½	.12	.12½
No. 3½ color, 300 vis., pale oil	.15½	.16	.15½	.16	.15½	.16
No. 3¾ color, 500 vis., pale oil	.18½	.19	.18½	.19	.18½	.19
No. 4 color, 750 vis., pale oil	.20	.20½	.20	.20½	.20	.20½
No. 1½ plus color, 150 vis., pale filtered	.21½		.21½		.21½	
No. 2 plus color, 200 vis., pale filtered	.23		.23		.23	
No. 2 color, 300 vis., pale filtered	.27		.27		.27	
No. 2½ color, 500 vis., pale filtered	.31		.31		.31	
No. 2½ color, 750 vis., pale filtered	.41		.41		.41	
No. 5 to 6 color, 200 vis., red oil	.10½	.11	.10½	.11	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.12½	.13	.12½	.13	.12	.12½
No. 5 to 6 color, 500 vis., red oil	.14	.14½	.14	.14½	.13½	.14
No. 5 to 6 color, 750 vis., red oil	.18	.18½	.18	.18½	.18	.18½
CALIFORNIA—						
130 pale, 2½-3 color	.10	.12½	.10	.12½	.12	.12½
200 vis., 2½-3 color	.13½	.16	.13½	.16	.15½	.16
300 vis., 3 -3½ color	.15	.17½	.15	.17½	.17	.17½
350 vis., 3½-4 color	.16½	.19	.16½	.19	.18½	.19
400 vis., 3½-4 color	.18	.20½	.18	.20½	.20	.20½
Red Neutrals:						
200 vis., 4½-5 color	.12	.14½	.12	.14½	.14	.14½
300 vis., 5 -6 color	.13	.15½	.13	.15½	.15	.15½
400 vis., 5 -6 color	.15	.17½	.15	.17½	.17	.17½
500 vis., 4½-5 color	.18	.21	.18	.21	.20	.21
500 vis., 6 6-½ color	.16	.19	.16	.19	.18	.19
600 vis., 6½ plus color	.17	.19½	.17	.19½	.19	.19½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Dec. 29	Dec. 22	Dec. 15
U. S. Motor Gasoline, 58-60 437	.13	.13	.12½
Export Gasoline, 64-66 Be.	.16	.16	.16
*Bunker Oil, 14-16 Be.	1.65	1.65	1.65
*Diesel Oil, New York City	2.10	2.10	2.10
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.06¼	.06¼	.06¼
41-43 Kerosene prime white	.07	.07	.07

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Dec. 29	Dec. 22	Dec. 15
Motor Gasoline:			
58-60 Be. gravity, in cases	27.15	27.15	27.15
Standard white Kerosene, in cases	17.90	17.90	17.90
Water white Kerosene, in cases	19.40	19.40	19.40
†Lubricating Oils (in bulk):			
Cylinder Stock, extra filtered, 600 bbls.	.34	.34	.34
Cylinder Stock, light filtered, 600 bbls.	.29	.29	.29
No. 5 Bright Stock, .897 spec. grav.	.40½	.40½	.40½
No. 1 White Neutral, .878 spec. grav.	.36	.36	.36
Pale oil, "25" .898 spec. grav.	.12	.12	.12
Pale oil, "28" .892 spec. grav.	.08	.08	.08
Special "A" red oil, .897 spec. grav., 170 vis.	.11½	.11½	.11½
No. 2 red oil, .903 spec. grav., 212 vis.	.12	.12	.12
No. 1 red oil, .905 spec. grav., 265 vis.	.13½	.13½	.13½
Polar red oil, .903 spec. grav., 295 vis.	.14	.14	.14
Paraffin Wax:			
120-122 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
125-127 a.m.p., per lb.	.06¼	.06¼	.06¼
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07¼	.07¼	.07¼
Petrolatum, in bbls., carload lots, per lb.:			
Light amber	.03¾	.03¾	.03¾
Cream	.06	.06	.06
Lily white	.08	.08	.08
Snow white	.10	.10	.10

†All lub prices in barrels:

LOS ANGELES EXPORT PRICES

	Dec. 29		Dec. 22		Dec. 15	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor Gasoline, 54-56 437 end point	.08	.10	.07½	.09	.07	.09

CRUDE OIL PRICES

Arkansas and North Louisiana

Caddo, 38° and above	$1.95
35° to 37.9°	1.85
32° to 34.9°	1.75
Below 32°	1.65
Homer, 35° and above	1.75
32° to 34.9°	1.65
31° to 32.9°	1.55
Below 31°	1.40
Haynesville, 33° and above	1.65
Below 33°	1.55
El Dorado, 33° and above	1.65
Below 33°	1.55
Bull Bayou, 38° and above	1.75
35° to 37.9°	1.60
32° to 34.9°	1.45
Cotton Valley	1.10
De Soto	1.80
Crichton	1.60
Bellevue	1.65
*Stephens, Ark:	
Below 26°	1.20
26° and above	1.40

*Posted by Atlantic Oil Producing Co.

Smackover:	
(Standard Oil Co. of Louisiana)	
Below 24°	.85
24° to 24.9°	1.15
25° to 25.9°	1.20
26° to 26.9°	1.25
27° and above	1.30
(Atlantic Oil Producing Co.)	
Below 23°	.90
23° to 23.9°	.95

Wyoming, Montana, New Mexico and Colorado

Rock Creek (Wyo.)	1.75
Salt Creek:	
29° to 29.9°	1.23
30° to 30.9°	1.31
31° to 31.9°	1.39
32° to 32.9°	1.47
33° to 33.9°	1.55
34° to 34.9°	1.63
35° to 35.9°	1.71
36° to 36.9°	1.79
37° and above	1.87
Big Muddy	1.75
Mule Creek	1.25
Grass Creek (light)	1.90
Elk Basin	1.90
Lance Creek	1.90
Osage	1.90
Cat Creek (Mont.)	1.90
Sunburst (Mont.)	1.35
Lost Soldier	1.10
Greybull and Torchlight	1.90
Hamilton Dome	1.55
Hogback, (N. Mex.)	1.95
Artesia, (N. Mex.)	1.35
Florence (Colo.)	1.35

Lost Soldier and Lander based on contracts.

Oklahoma, Kansas, North and East Central Texas

*Prairie Oil & Gas Co. and other major purchasing companies except as noted.

28° to 28.9°	1.15
29° to 29.9°	1.23
30° to 30.9°	1.31
31° to 31.9°	1.39
32° to 32.9°	1.47
33° to 33.9°	1.55
34° to 34.9°	1.63
35° to 35.9°	1.71
36° to 36.9°	1.79
37° to 37.9°	1.87
38° to 38.9°	1.95
39° to 39.9°	2.03
40° to 40.9°	2.11
41° to 41.9°	2.19
42° to 42.9°	2.27
43° to 43.9°	2.35
44° to 44.9°	2.43

For crude under 28° gravity, bought only from producers having connections on November 1, 1925, Prairie Oil & Gas Co. pays on a basis of an 8-cent spread for each degree.

*Humble Oil & Refining Co.	
(North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran.)	
Below 28°	1.07
Other grades same as Prairie Oil & Gas.	
*Magnolia Petroleum Co.	
(Oklahoma, Kansas and Texas.)	
Below 28°	$1.07
Other grades same as Prairie Oil & Gas Co.	
Corsicana heavy	1.05
Thrall	1.00
*The Texas Co.	
(Oklahoma and Texas)	
Below 28°	1.07
Other grades same as Prairie Oil & Gas Co.	
Panhandle:	
(Posted by Kay County Gas Co.)	
28° to 30.9°	1.05
31° to 33.9°	1.20
34° to 36.9°	1.35
37° to 39.9°	1.55
40° and above	1.55
Gypsy Oil Co.—	
Bristow, Glenn Pool, Morris and Perryman:	
25° to 25.9°	.91
26° to 26.9°	.99
27° to 27.9°	1.07
Other grades same as Prairie Oil & Gas Co.	
Champlin Refining Co.—	
38° to 38.9°	2.10
39° to 39.9°	2.18
40° to 40.9°	2.26
41° to 41.9°	2.34
42° to 42.9°	2.42
43° to 43.9°	2.50
44° and above	2.58

Gulf Coast

Grade A	1.50
Grade B	1.25
Luling (Magnolia)	1.40
Laredo (Magnolia Petroleum Co.)	.85
Lockhart (Magnolia)	2.25
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	2.05
Webb, Jim Hogg, Zapata	1.15
*High Island	1.20

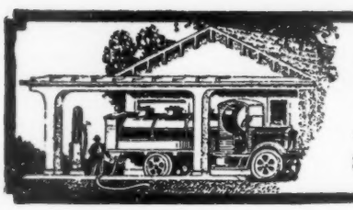
*Posted by Sun Oil Co.

*Somerset	
Below 30°	1.25
30° to 32.9°	1.35
33° to 35.9°	1.80
36° to 38.9°	1.95
39° to 41.9°	2.10
42° and above	2.35

*Posted by Grayburg Oil Co.

Eastern States	
Penna Grade Oil in New York Transit Lines	3.65
Bradford District Oil in National Transit Lines	3.65
Penna Grade Oil in National Transit Lines	3.55
Penna Grade Oil in Southwest Pa. Pipe Lines	3.55
Penna Grade Oil in Eureka Pipe Line Lines	3.50
Penna Grade Oil in Buckeye Pipe Line Lines	3.30
Cabell Grade Oil in Eureka Pipe Line Lines	2.10
Corning Grade Oil in Buckeye Pipe Line Lines	1.95
Somerset Medium Oil in Cumberland Pipe Line Lines	2.20
Somerset Light Oil in Cumberland Pipe Line Lines	2.35
Ragland Grade Oil in Cumberland Pipe Line Lines	1.15
Gaines	2.70
Lima	1.98
Wooster	2.00
Illinois	1.87
Indiana	1.78
Princeton	1.87
Plymouth	1.40

(Continued on Page 182)



TANK WAGON MARKETS

Tank wagon quotations on gasoline and kerosene in United States as furnished by the larger marketing concerns, Dec. 29.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Chicago Dist.—				
†Less than 100 gals.	16.0	18.0	...	11.0

Tank wagon prices on April 19, 1922: g. up 1½c; May 8, g. up 1c; June 27, g. and k. up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb., 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c; k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c.

Decatur, Ill.	16.2	18.2	...	11.5
East St. Louis	15.1	17.35	...	10.6
Joliet	16.4	18.4	...	11.7
Peoria	10.5	12.5	...	11.7
Quincy	16.2	18.2	...	11.3
Davenport, Ia.	18.5	20.5	2.0	11.9
Des Moines	18.5	20.5	2.0	11.9
Keokuk	18.5	20.5	2.0	11.9
Sioux City	18.0	20.0	2.0	11.5
Duluth, Minn.	17.5	19.5	2.0	12.6
Minneapolis	17.2	19.2	2.0	12.6
La Crosse, Wis.	19.2	21.2	2.0	12.1
Milwaukee	18.1	20.1	2.0	11.3
Madison	18.3	20.3	2.0	11.5
Detroit, Mich.	18.8	20.8	2.0	12.2
Grand Rapids	18.7	20.7	2.0	12.1
Saginaw	18.9	20.9	2.0	12.3
Evansville, Ind.	19.0	21.0	3.0	11.5
Fort Wayne	19.4	21.4	3.0	11.9
Indianapolis	19.2	21.2	3.0	11.7
South Bend	19.4	21.4	3.0	11.9
Fargo, N. D.	19.9	21.9	1.0	14.6
Huron, S. D.	17.0	19.0	3.0	13.1
Sioux Falls	18.0	20.0	3.0	12.6
*K. C., Mo.	17.9	19.9	3.0	10.3
*Springfield	18.8	20.8	3.0	11.2
*St. Louis	17.6	19.9	2.5	11.0
*St. Joseph	18.0	20.0	2.5	10.9
Wichita, Kan.	17.8	19.8	2.0	10.8
Bartlesville, Ok.	16.9	18.9	3.0	9.9

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 15.0.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of the Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons 1½ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Newark, N. J.	15.0	17.5	...	14.0
Atlantic City	15.0	....	...	14.0
Annapolis, Md.	17.0	....	...	13.5
Baltimore	17.0	20.0	2.0	11.0
Cumberland	17.0	20.0	2.0	14.0
Washington	17.0	20.0	2.0	13.0
Norfolk, Va.	18.0	21.0	3.0	14.0
Petersburg	18.0	....	3.0	14.0
Danville	18.0	....	3.0	14.0
Richmond	18.0	21.0	3.0	14.0
Roanoke	18.0	21.0	3.0	14.0
Keyser, W. Va.	18.5	....	3.5	14.0
Charleston	18.5	21.5	3.5	14.0
Parkersburg	18.5	21.5	3.5	14.0
Wheeling	18.5	21.5	3.5	14.0
Charlotte, N. C.	19.0	22.0	4.0	14.0
Hickory	19.0	....	4.0	14.0
Mt. Airy	19.0	....	4.0	14.0
Salisbury	19.0	....	4.0	14.0
Charleston, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	23.0	5.0	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Atlanta, Ga.	21.0	25.0	3.5	15.0
Augusta	22.0	25.0	3.5	14.5
Macon	22.0	25.0	3.5	13.5
Savannah	17.0	20.0	3.5	13.0
Birm'gham, Ala.	19.0	22.0	2.0	14.5
Mobile	18.0	21.0	2.0	12.0
*Montgomery	20.0	23.0	3.0	15.5
Clarksdale, Miss.	19.0	22.0	3.0	12.0
Jackson	19.0	22.0	3.0	10.0
Natchez	18.5	21.5	3.0	11.5
Vicksburg	18.5	21.5	3.0	11.5
Jacksonville, Fla.	20.0	23.0	4.0	13.0
Miami	22.0	25.0	4.0	14.5
Pensacola	20.0	23.0	4.0	13.5
Tampa	20.0	23.0	4.0	13.0
Lexington, Ky.	18.0	21.0	3.0	14.0
Covington	19.0	22.0	3.0	14.0
Louisville	20.0	23.0	3.0	12.0

*In addition to the State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
*Pittsburgh, Pa.	17.0	22.0	...	13.0
*Philadelphia	17.0	22.0	...	13.0
*Scranton	17.0	22.0	...	13.0
*Allentown	17.0	22.0	...	13.0
Altoona	17.0	22.0	...	13.0
*Erie	17.0	22.0	...	13.0
Dover, Del.	19.0	22.0	2.0	13.0
Wilmington	19.0	22.0	2.0	13.0
Springf'ld, Mass.	17.0	19.0	...	14.5
Worcester	17.0	19.0	...	14.5
Boston	17.0	20.0	...	14.0
Providence, R.I.	18.0	21.0	1.0	14.0
Hartford, Conn.	19.0	21.0	2.0	13.5
New Haven	19.0	22.0	2.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Dallas, Tex.	15.0	19.0	1.0	12.0
Fort Worth	14.0	16.0	1.0	12.0
Houston	17.0	19.0	1.0	12.0
San Antonio	13.0	15.0	1.0	10.0
El Paso	18.0	19.0	1.0	13.0
Texarkana	17.0	20.0	1.0	12.5
Muskogee, Okla.	19.0	22.0	3.0	10.0
Oklahoma City	19.0	22.0	3.0	12.0
Tulsa	19.0	22.0	3.0	12.0
Little Rock	18.5	21.5	4.0	12.5
Ft. Smith, Ark.	18.5	21.5	4.0	12.5

*The following is the schedule of discounts on gasoline adopted by the Magnolia Petroleum Co. in Texas sales and the discounts are graded according to gallonage: Over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1½ cents; over 10,000 gallons, 2 cents; over 9,000 gallons a year, ½ cent; over 24,000 gallons a year, ¾ cent; over 36,000 gallons a year, 1 cent; over 72,000 gallons a year, 1½ cents; over 120,000 gallons a year, 2 cents.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 600 gallons a month, 2 cents; over 2,400 gallons a year, 1 cent; over 7,200 gallons a year, 2 cents.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Albany, N. Y.	17.0	....	...	15.0
*New York	17.0	....	...	15.0
Buffalo	15.0	....	...	15.0
Rochester	15.0	....	...	15.0
Syracuse	16.0	....	...	15.0
Boston, Mass.	17.0	....	...	....
Providence, R. I.	18.0	....	1.0	....
Augusta, Me.	20.0	....	3.0	15.0
Manchester, N. H.	19.0	....	2.0	15.0
Burlington, Vt.	21.0	....	2.0	15.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
All Ohio points.	18.0	20.0	2.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incldg tax of	Tank wagon
Casper, Wyo.	19.5	21.5	2.5	13.0
Cheyenne	19.5	21.5	2.5	14.5
Albuquerque, N. Mex.	23.5	26.5	3.0	16.5
Salt Lake, Utah	22.0	24.0	3.5	18.0
Denver, Colo.	18.0	20.0	2.0	14.5
Pueblo	18.0	20.0	2.0	14.5
Butte, Mont.	21.0	21.0	2.0	16.0
Helena	23.0	25.0	2.0	17.0
Boise, Idaho	23.0	25.0	3.0	20.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incldg tax of	Tank wagon
*New Orleans	17.0	20.0	3.0	11.5
Alexandria	16.5	19.5	2.0	12.5
Baton Rouge	15.5	18.5	2.0	11.0
LaFayette	16.5	19.5	2.0	12.0
Lake Charles	17.0	20.0	2.0	12.5
Shreveport, La.	15.5	18.5	3.0	11.5
Memphis, Tenn.	16.5	19.5	3.0	13.5
Chattanooga	17.0	20.0	3.0	14.0
Knoxville	18.0	21.0	3.0	14.5
Nashville	17.0	20.0	3.0	14.0
Bristol	18.5	21.5	3.0	14.0
Little Rock, Ark.	18.5	21.5	4.0	11.5

*Tax of 3 cents includes city tax of 1 cent.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incldg tax of	Tank wagon
San Francisco	16.0	20.0	2.0	16.5
Los Angeles	14.5	18.5	2.0	15.5
Fresno	16.5	20.5	2.0	17.5
Reno, Nev.	21.5	25.5	4.0	19.0
Portland, Ore.	17.0	21.0	3.0	16.5
Seattle, Wash.	16.0	20.0	2.0	16.5
Spokane	20.0	24.0	2.0	20.5
Tacoma	16.0	20.0	2.0	16.5
Phoenix, Ariz.	23.0	26.0	3.0	21.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incldg tax of	Tank wagon
Omaha	18.25	20.25	2.0	11.5
Crawford	19.0	....	2.0	12.25
McCook	19.75	21.75	2.0	13.0
Norfolk	18.75	20.75	2.0	12.0
North Platte	19.75	21.75	2.0	12.75
Scottsbluff	19.25	21.25	2.0	12.25

STILL USED INSTEAD OF STEAM EQUIPMENT

(Continued from Page 179)

of preheating the oil in the upper section evaporating the lighter ends and at the same time knocks back the heavy ends.

These heavy ends, as in some types of stills, do not pass out of the system, but are again passed to the lower section of the preheater. This recycling is an important factor in securing the maximum recovery of gasoline from the oil.

The end point control of the finished product is secured in the dephlegmator at the top of the evaporator. Water is used as the cooling medium in the dephlegmator or knock-out which follows the usual design of having vapors pass through the tubes surrounded by the circulating water. Automatic instruments controlling the fires of the preheaters maintain a constant oil temperature. Automatic control is also used in the operation of the knock-out. The preheaters and evaporator are heavily insulated.

The installation of the still has resulted in a considerable saving to the Henderson Co. In fuel, the new still requires 200,000 feet of gas daily. This is approximately one-fourth of the gas used with the four boilers which it replaced. Three less men are required to operate the distillation unit. It is expected that maintenance costs will be much less than when the boilers and steam stills were used. The economy in space is indicated from the fact that the new still requires only 8 by 10 feet.

The finished product is better than with the steam still, having a 350 end point, crystal white and doctor sweet without treating. The still so far has shown a 100-gallons-daily saving in absorbent oil. The gasoline content of the residue gas has been reduced from one-half gallon per 1,000 feet to 9/100 gallon based on the charcoal test.

EAST INDIES CONCESSIONS

London reports a Standard Oil Co. of New Jersey subsidiary has concluded an agreement with the Dutch East Indian Government for the exploration of 290,000 hectares in Palembang, Madiera and Java. Royal Dutch, through its subsidiary, Netherlands Indies Oil Co., has also reached an agreement with the Government respecting fields in Sumatra, on the same terms as those pertaining to the Djambi concessions.

TANK WAGON CHANGES

December 22—Standard Oil Co. of California advanced gasoline tank wagon and service station prices 2 cents at Los Angeles, Calif.

December 24.—Standard Oil Co. of Indiana advanced gasoline tank wagon and service station prices 2 cents at Decatur, Ill.

CRUDE OIL PRICES

(Continued from Page 181)

Waterloo	1.00
Oil Springs, Canada	2.45
Petrolia, Canada	2.38
*Western Kentucky, 36° and above	1.80
*Western Kentucky, 35° to 35.9°	1.70
*Western Kentucky, 32.9° and below	1.60
Cumberland, Barren, and Monroe Counties (Kentucky), (Paragon Development Co.)	2.35

*Prices for Warren, Allen, Hancock, Simpson and Ohio Counties by Indian Refining Co.

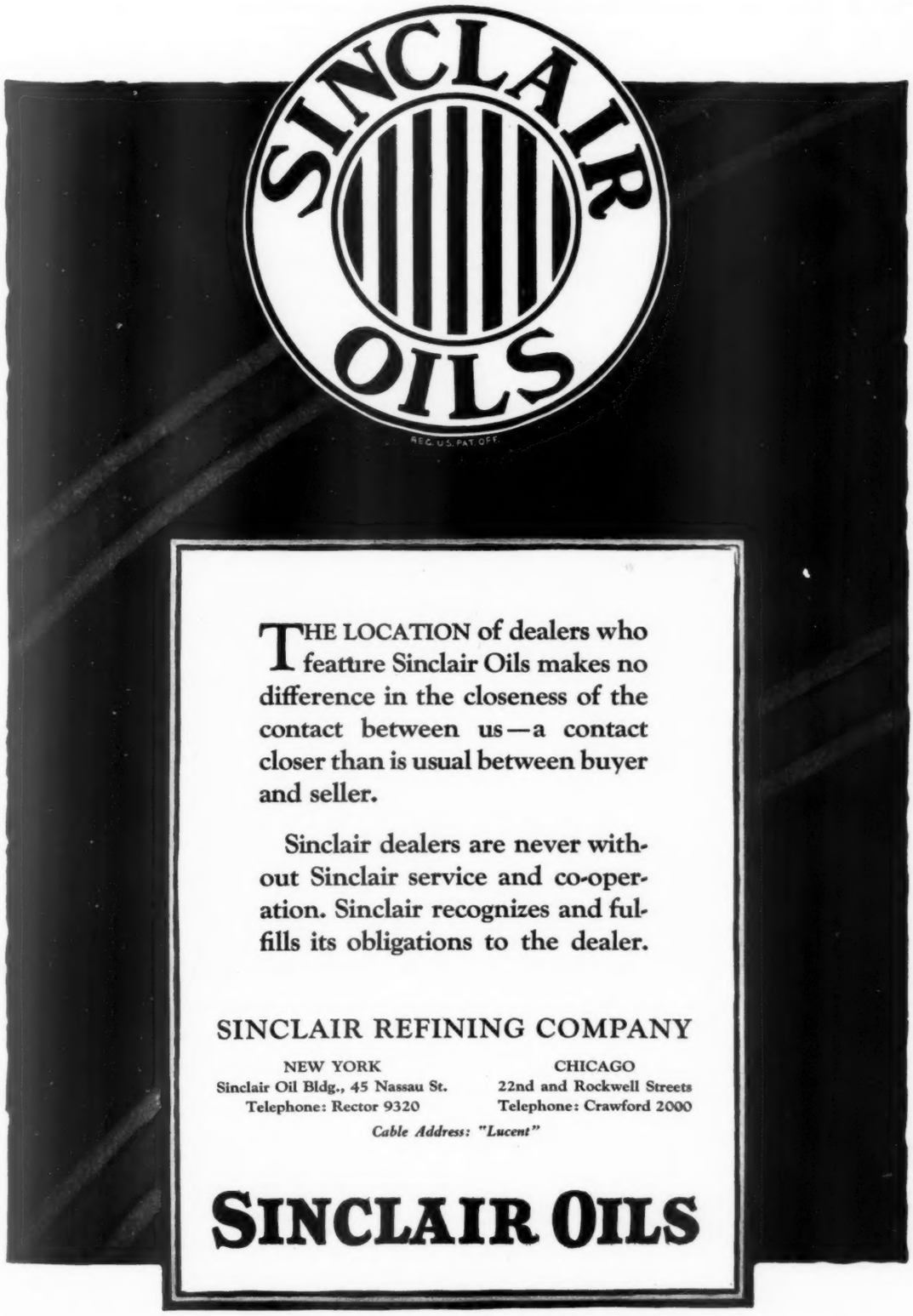
Mexican Crude

*Tuxpam light (f.o.b. Mex. ports)	1.75
‡Panuco heavy (f.o.b. Mex. ports)	1.45
Tuxpam (New York)	2.25
Panuco (New York)	1.82

*Plus 30.45c tax. ‡16.94c tax.

CALIFORNIA PRICES

Gravity	Long Beach	Richfield Huntington Beach Brea-Olinda	Rosecrans	Torrance Inglewood	Whittier La Habra Montebello	Coyote	Santa Fe	Kern River Newhall McKittrick	Midway-Sunset Elk Hills	Lost Hills Belridge	Coalinga	Wheeler Ridge
14°	$ .85	$ .85	....	$ .85	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75
15°	.87	.87	....	.87	.85	.85	....	.75	.75	.75	.75	.75
16°	.90	.90	....	.90	.85	.85	....	.75	.75	.75	.75	.75
17°	.94	.94	....	.94	.85	.85	....	.75	.75	.75	.75	.75
18°	.98	.98	....	.98	.85	.85	....	.75	.75	.75	.75	.75
19°	1.02	1.02	....	1.02	.85	.85	....	.75	.75	.75	.75	.75
20°	1.06	1.06	....	1.06	.87	.88	....	....	.79	.79	.79	.78
21°	1.10	1.10	....	1.10	.89	.94	....	....	.84	.84	.84	.81
22°	1.14	1.14	....	1.14	.91	1.00	....	....	.92	.92	.89	.84
23°	1.18	1.18	....	1.18	.94	1.06	....	....	1.00	1.00	.94	.87
24°	1.22	1.22	....	1.22	.97	1.12	.97	....	1.08	1.08	.99	.90
25°	1.26	1.26	....	1.26	1.00	1.18	1.05	....	1.16	1.16	1.04	.93
26°	1.30	1.30	$1.30	1.30	1.03	1.24	1.13	....	1.24	1.24	1.09	.96
27°	1.34	1.34	1.34	1.34	1.06	1.30	1.21	....	1.32	1.32	1.14	.99
28°	1.38	1.38	1.38	1.38	1.09	1.36	1.28	....	1.40	1.40	1.19	....
29°	1.42	1.42	1.42	....	1.12	1.42	1.34	....	1.48	1.48	1.24	....
30°	1.46	1.46	1.46	....	1.15	1.48	1.40	....	1.56	1.56	1.29	....
31°	1.52	....	1.52	....	....	....	1.46	....	1.64	1.64	1.34	....
32°	....	....	1.58	....	....	....	1.52	....	1.72	1.72	1.39	....
33°	....	....	1.64	....	....	....	1.60	....	1.80	1.80	1.44	....
34°	....	....	1.70	....	....	....	1.68	....	....	1.88	1.49	....
35°	....	....	1.76	....	....	....	1.76	....	....	....	1.54	....
36°	....	....	1.84	....	....	....	1.84	....	....	....	....	....
37°	....	....	1.93	....	....	....	1.92	....	....	....	....	....
38°	....	....	2.00	....	....	....	2.00	....	....	....	....	....
39°	....	....	2.08	....	....	....	....	....	....	....	....	....
40°	....	....	2.16	....	....	....	....	....	....	....	....	....
41°	....	....	2.24	....	....	....	....	....	....	....	....	....
42°	....	....	2.30	....	....	....	....	....	....	....	....	....



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SINCLAIR OILS

Large Gasoline Yield From Crude

Root Refineries Inc., Secure Better Than 40 Per Cent Gasoline Recovery From Heavy Smackover Crude in Non-Residuum Operation

By C. O. Willson

The Root Refineries, Inc., at its El Dorado, Ark., refinery secures from 42 to 45 per cent U. S. Motor end point gasoline from Smackover heavy crude having a gravity of 10 to 20° degrees Baume. The yields represent the combined output of skimming and cracking operations at the refinery in a nonresiduum cycle of operation.

The Root operations are in contrast to those of the Houston Oil Co., of Camden, Ark., explained in the December 24 issue of The Oil and Gas Journal, although both plants operate on the same grade crude with the same type of cracking equipment. At the Houston plant the securing of a gasoline yield was of secondary importance, the main purpose of the operation being a large throughput of crude from which a fuel oil residuum was obtained.

At the Root plant skimming and cracking operations are consolidated with every other product sacrificed in securing the largest possible gasoline yield. Despite this difference in plant methods both plants have been operated profitably for the past several months, a period in which many Mid-Continent refiners have considered themselves fortunate if they were able to break even.

The management of the Root plant does not claim that they are securing the maximum yields obtainable from Smackover crude. Their situation has been similar to that of the Houston plant in that some experimental work has been necessary which has not always given the results hoped for. There are still some details to be perfected but the main difficulties have been overcome in the handling of a crude concerning which little was known from a refinery standpoint up to a year ago.

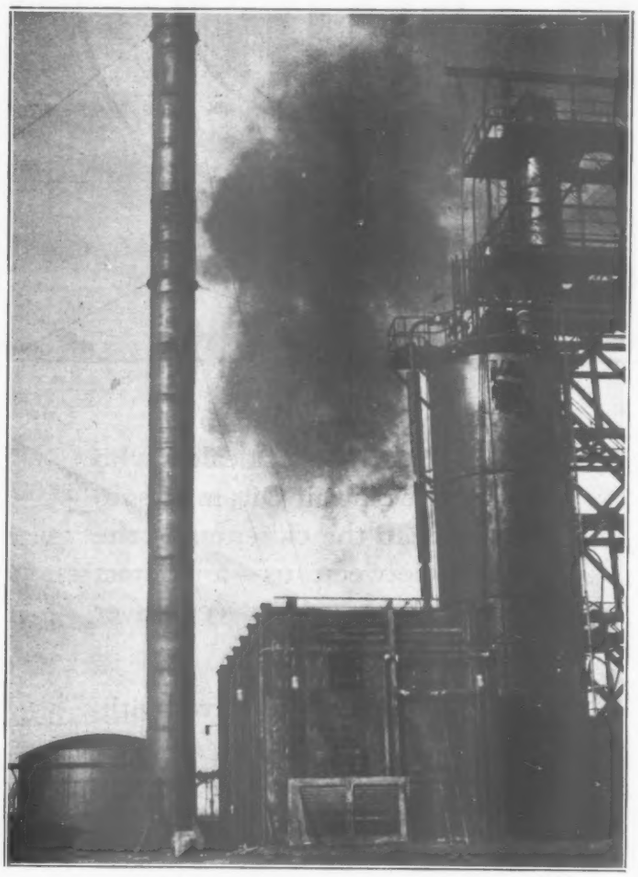
At the present time the cracking capacity is not sufficient to handle the charging stock available from the skimming operations of the refinery. This situation is to be remedied after the first of the year when a second Dubbs unit will be installed.

Skimming Plant

At present the skimming plant is operated to secure whatever charging stock is needed for the one Dubbs unit and during the remaining time, methods are changed to obtain the meximum returns possible from a straight skimming operation. Only minor changes have been made in the skimming equipment. Originally the Root plant operated with a lighter gravity crude of the Ed Dorado area. No doubt other equipment could now be installed which would give larger returns in the skimming operations and which could be operated more satisfactorily with the cracking equipment. However, following the usual policy of other refiners those in charge of the operations of the Root refineries have made no radical changes in their skimming plant equipment.

The skimming plant battery consists of five 6 by 20-foot stills, each having a capacity of 100 bbls. Each still has a baffle tower of the Christman type which has given better fractionation with the Smackover crude than had been expected. The crude is first pumped through a large heat exchanger where it comes in contact with the hot residuum from the last shell still. Before passing to the first shell still the crude, which has been preheated to a temperature of approximately 140 degrees Fahrenheit, goes to a separator. Here the sand, salts and other solids are separated from the crude, being drawn off at the bottom of the separator by the stillman whenever necessary. Crude as it comes from the Smackover wells contains varying amounts of water and objectionable solids. Some of the crude is partially dehydrated in the field but usually the crude reaches the refinery containing more or less material which if not taken out before refining gives trouble.

Heating the oil aids in settling out the objectionable constituents. The separator at the Root plant has a capacity of about 15 bbls. This is to be replaced by a larger separator which it is believed will give still better results.



Cracking unit in operation at the El Dorado, Ark., refinery of the Root Refineries, Inc.

Nine Per Cent Gasoline

When operated to secure a charging stock for the cracking still the overhead recovery of benzine from the five stills operated continuously averages 12 per cent of the crude charge which is 1,800 to 2,000 bbls. daily. This benzine, after an acid and doctor treatment, is steam stilled. The latter still is the horizontal shell type with a capacity of 350 bbls. This still also has a bubble tower through which the benzine is passed before entering the steam still. The product of this operation is a U. S. Motor end point gasoline. The gravity is low and it is usually necessary to blend with natural gasoline before marketing. The final recovery of gasoline averages about 9 per cent of the crude charge. This leaves a charging stock of 17.5 to 18 degrees Baume gravity from the cracking unit.

When enough charging stock for the cracking still is on hand, the skimming operations are changed. The overhead recovery is increased to 24 per cent equally divided between benzine and dark gas oil. Cutting deeper into the crude gives a residuum of 15 to 16 degrees Baume gravity. The latter is sold as fuel oil or, when there is a market for the output, can be refined to meet road oil specifications. The benzine is steam stilled in the manner just described.

The Dubbs equipment is the latest Dubbs design. The reaction chamber which is 10 by 30 feet is the first of that size installed. The reaction chamber formerly installed was 10 by 15 feet. The larger chamber is a requisite in a nonresiduum operation with the Smackover crude.

The unit is operated with one less man for each shift than is customary. This is due to the additional automatic features which simplify control. An automatic arrangement maintains a uniform level control in the pressure distillate accumulator tank. An automatic temperature control regulates the flow of charging stock to the dephlegmator. This gives a control over the end point of the pressure distillate which assures a uniform product.

May Use Residuum

Other than the additional automatic features the operation is the same as other Dubbs installations. While the unit is on stream a residuum is drawn from the reaction chamber which totals from 10 to 12 per cent of the original charge to the still. This product when brought to atmospheric temperature crystalizes. No profitable market has been developed for this product yet and in order to prevent a large accumulation at the plant site it is burned as it comes from the reaction chamber. It accounts for the smoke seen in the accompanying picture. The place where this residuum is burned is several hundred feet from the cracking unit. This residuum can best be described as a product between coke and a commercial grade of fuel oil. Analysis has shown that it contains constituents which would furnish valuable by-products. Considerable research work and it is probable that in the near future a marketable product will be obtained. This would add greatly to the attractiveness of the nonresiduum method of handling the Smackover crude.

Yields of pressure distillate from the operation vary but the average recovery is around 62 per cent of the fuel charge to the units. The unit generally operates on a three-day cycle. One of the three days is used to clean out and get the unit back in operation. With the Root method of operation the unit has a capacity of 20,000 bbls. a month. The coke recovery in the reaction chamber for the three-day cycle will average 55 tons. This coke is removed in large lumps and is an excellent fuel. The company has developed a market in northern points for this coke where it is used for home heating. The price received is more than that ordinarily obtained for petroleum coke at other plants when sold to consumers located in the Mid-Continent area. In addition to the coke and pressure distillate enough fixed gases are obtained to furnish fuel for the cracking unit and one boiler.

Pressure Distillate

The pressure distillate, after an acid and doctor treatment, is rerun in the same steam still used for the benzine of the skimming operations. The final product is a U. S. Motor end point 105 to 110 initial gasoline usually of 55 to 57 Baume gravity. No trouble has been experienced in the marketing of the gasoline since the proper treating methods were worked out. The gasoline has the anti-detonating characteristics found in all the cracked gasolines from Smackover crude where properly refined.

Corrosion

Corrosion has not been as great a problem at the Root refinery as it has at several other plants operating with Smackover crude. At the skimming plant trouble was first experienced in the condenser coils. Sterling equipment is now being used with brass connections. This has practically eliminated corrosion trouble at the skimming plant. At the cracking unit corrosion has not been up to the present time an important maintenance item. This is explained as being due to the fact that from the fuel oil residuum water emulsions and other objectionable constituents have been removed. Refiners generally in the Smackover and north Louisiana agree that the "drier" the crude or other charging stock of the skimming and cracking stills, the less is the corrosion trouble.

OIL TANKAGE IN SPAIN

The Sociedad Espanola de Compras y Fletamentos, with a capital of 100,000,000 pesetas, of which 80,000,000 were subscribed by American oil interests and 20,000,000 by Spanish interests, is building steel tankage at Malaga for the storage of gasoline, kerosene and fuel oils. The total capacity will be about 3,000,000 litres.

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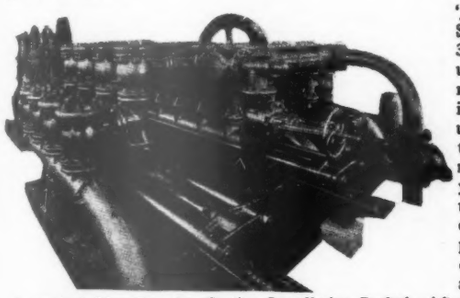
Thousands of pounds of "JOHN CRANE" packing are being used by the largest refineries of the world on centrifugal gasoline pumps, high temperature rotating pumps, high temperature valves and expansion joints, rotating shafts on stills, pump swing joints, air compressors, natural gas compressors, drilling engines, polish rods, mud pumps, and other auxiliaries handling water, oil and other liquids.

Four styles of "JOHN CRANE" Packing will handle all of these services.



A Typical Line Pumping Station Installation Packed with "John Crane" Style 100

'JOHN CRANE' Styles 100, 200, 300 and 400, manufactured in spirals, are convenient to ship and use. These metallic packings do not depreciate on your shelves or under heat conditions; they are perfect years after the date they are purchased; they do not dry out.

"JOHN CRANE" Packings are made of foil, either babbitt, aluminum or copper, spirally wrapped forming a flexible, compressible metallic packing suitable for the highest temperatures or the highest pressures.

"JOHN CRANE" Metallic Packings are replacing asbestos, duck and rubber, flax and other friction-producing packings because "JOHN CRANE" is mechanically correct, made of friction-reducing material, not affected by the action of oil, water, or acids and outlasts in service other packings.

10 Years—24 Hours Daily

"JOHN CRANE" Metallic Packing Style 100 has lasted 10 years under 24 hours daily service on plunger line station pumps for one of the largest pipe line companies in the U. S. A. Pipe Line Superintendents the world over! Think what this means!

Showing Babbitt Foil, "John Crane" Style 100

1—Plungers become polished like glass.

2—Friction is reduced.

3—Power is saved.

4—Continuous, uninterrupted, 24-hour service pumping crudes, and distillates.

5—The packing is permanent; will not disintegrate; requires practically no adjustment after installation.

6—The cost of re-turning or replacing plungers is entirely eliminated.

7—Metallic packing is not affected by oil; provides a babbitted bearing through which the plunger works on a film of oil.

Buy "JOHN CRANE" Metallic Packing—it will pay for itself many times over through less repairs, less shut-downs, and less power consumed. Write for catalog or order sets or coils now, describing conditions.

Crane Packing Company
1819 Cuyler Ave., Chicago

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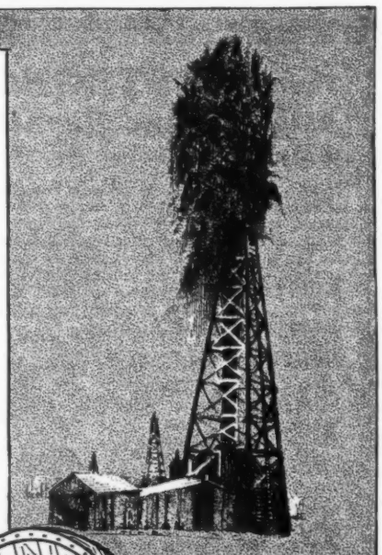
CRANE PACKING CO., Ltd., Slough, Bucks, England

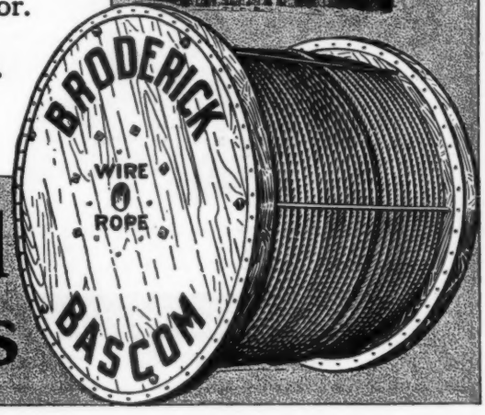
They're Pliable

Drilling means incessant vibration. Vibration means incessant bending. Bends mean quick death to "stiff" drilling lines.

B & B Patentsteel Drilling Lines are extra pliable—absorb the vibrations. Stand up well to the bends over drum and sheave. Do not kink easily. Extra elastic, B & B Patentsteel Lines drill ahead of the tools and make hole faster. Extra strong, they last longer and cost less.

Standard B & B Drilling Lines for all fields. Also special lines made to order on short notice. Write for Catalog K2 and name of nearest distributor.





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Branches: 76 Warren St., New York City, and Seattle, Wash.
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J140

B&B Patent Steel Drilling Lines

STEADY DECLINE IN TOTAL OUTPUT OF OIL IN MID-CONTINENT STATES

A decline of 87,015 bbls. a day in the total production of the States of Kansas, Oklahoma, Texas, Arkansas and Louisiana from July to November, inclusive, shows the trend of production in a portion of the United States responsible for around 60 per cent of the production of the United States. Dividing the territory into 11 sections it is found that in 8 of the 11 there was a decline in production ranging all the way from 55,169 bbls. in Arkansas to 282 bbls. in North Texas, while in the three sections showing an increase, Oklahoma led with 26,251 bbls. a day, and the two others, Texas Panhandle and Louisiana Gulf Coast, 1,245 bbls. and 1,765 bbls., respectively.

The average daily production in July and in November shows the following changes: Kansas, from 118,925 bbls. to 107,397 bbls., a decline of 11,528 bbls.; Oklahoma, from 460,115 bbls. to 486,366 bbls., or 26,251 bbls. to the good; North Texas, from 82,894 bbls. to 83,176 bbls., a drop of 282 bbls.; Central and West Texas, from 70,624 bbls. to 68,622 bbls., 282 bbls.; East Central Texas, from 99,381 bbls. to 72,439 bbls., a drop of 26,942 bbls.; Texas Panhandle, from 3,660 bbls. to 4,905 bbls., an increase of 1,245 bbls.; Gulf Coast Texas, from 95,854 bbls. to 82,848 bbls., a decline of 13,006 bbls.; Southwest Texas from 47,676 bbls. to 42,621 bbls., a decline of 5,514 bbls.; Gulf Coast Louisiana, from 11,141 bbls. to 12,906 bbls., an increase of 1,765 bbls.; North Louisiana, from 47,945 bbls. to 45,730 bbls., a drop of 2,215 bbls.; Arkansas, from 252,768 bbls. to 197,599 bbls., a decline of 55,169 bbls.

Production in November as compared with October shows a total decline of 23,530 bbls. in which every State suffered excepting Oklahoma, where the big production in the Garber Field was altogether responsible for an increase of 5,037 bbls. a day, Garber's output being large enough to offset losses in other big fields.

SUMMARY OF PRODUCTION

Kansas, Oklahoma, Texas, Arkansas and Louisiana in November

	Daily Av.	Month
Kansas	107,397	3,221,910
Oklahoma	486,366	14,590,980
Texas	354,152	10,624,560
Arkansas	197,599	5,927,955
Louisiana	58,636	1,759,042
Total	1,204,150	36,124,457
Total	1,227,680	38,058,080
Difference	23,530	1,933,633

KANSAS

Daily Average and Total Monthly Production in November, 1925

	Daily Av.	Month
Marion County:		
Florence	1,004	30,120
Peabody	2,192	65,760
Covert-Sellers	961	28,830
Total	4,157	124,710
Butler County:		
Elbing	3,156	94,680
Potwin	651	19,530
Cameron-Robinson	619	18,570
Wilson-Dunkle	1,971	59,130
Towanda	2,835	85,050
El Dorado	6,673	200,190
Fox Bush	2,113	63,390
Nuttle-Koogler	1,846	55,380
Smock	326	9,780
Leon-Weaver	762	22,860
North Augusta	1,083	32,490
South Augusta	2,019	60,570
Sluss	437	13,110
Douglass	137	4,110
Blankenship	1,232	36,960
Total	25,860	775,800
Greenwood-Woodson Counties:		
Sallyards	1,843	55,290
Teeter-Pixley-Scott	18,127	543,810
Virgil	4,712	141,360
Thrall-Burkett	5,539	166,170
Seely	9,169	275,070
Polhamus	2,941	88,230
Miscellaneous	346	10,380
Cowley County:		
Total	42,677	1,280,310
Rainbow Bend	6,779	203,370
Slick	2,190	65,700
Graham	2,062	61,860
Rock (Twp. 30-4)	443	13,290
Clark (Twp. 31-5)	316	9,480
Eastman (Twps. 30-6 and 31-6)	1,076	32,280
Winfield-New Salem (Twps. 32-4 and 32-5)	1,819	54,570
Miscellaneous	571	17,130
Total	15,256	457,680
Other Counties:		
Sumner	18	540
Rice	103	3,090
Russell	5,670	170,100
Harvey	46	1,380
Chautauqua	2,302	69,060
Elk	1,509	45,270
Wilson	361	10,830
Montgomery	2,995	89,850
Allen	667	20,010
Neosho	757	22,710
Lyon	244	7,320
Miami	451	13,530
Franklin	553	16,590
Douglass	44	1,320
Bourbon	26	780
Linn	295	8,850
Anderson	3,369	101,070
Labette	37	1,110
Total	19,447	583,410
Total	107,397	3,221,910

OKLAHOMA

Daily Average and Total Monthly Production in October

	Daily Av.	Month
Washington County	5,960	178,800
Nowata County	4,526	135,780
Rogers County	1,276	38,280
Osage and Eastern Kay Counties:		
Burbank	48,672	1,460,160
Osage, outside Burbank	34,135	1,024,050
Total	82,807	2,484,210
Tulsa County:		
Bird Creek, Owasso, etc.	3,006	90,180
Red Fork, Sand Springs, Bruner, Turkey Mountain and Fisher	2,764	82,920
Bixby, Leonard and Jenks	1,398	41,940
Broken Arrow and Coweta	1,273	35,190
Total	8,441	250,230
Okmulgee-Muskogee Counties:		
Mounds, Beggs, Hamilton Switch, Youngstown	11,007	330,210
Bald Hill and Haskell	3,954	118,620
Morris, Boynton and Cole	2,659	79,770
Okmulgee	2,550	76,500
Tiger Flats, Henryetta and Schulter	2,783	83,490
Total	22,953	688,590
Okfuskee, Seminole and Hughes Counties:		
Deaner-Lyons	4,513	135,390
Wewoka	8,812	264,360
Cromwell	22,275	668,250
Papoose-Gilcrease	14,010	420,300
Okemah	280	8,400
Weleetka	1,961	58,830
Wetumka	76	2,280
Yeager	996	29,880
Total	52,923	1,587,690
Creek County:		
Cushing-Shamrock	22,033	660,990
Glenn Pool, Sapulpa and Kiefer	8,891	266,730
Bristow, Kellyville and Depew	22,114	663,420
North Bristow (Twp. 17-8)	2,990	89,700
East Bristow or Slick	6,006	180,180
Total	62,034	1,861,020
Pawnee County:		
Cleveland	5,672	170,160
Keystone	1,128	33,840
Jennings	5,473	164,190
Otoe or Watchorn	3,457	103,710
Masham	280	8,400
Total	16,010	480,300
Yale, Quay and Ingalls	5,712	171,360
North Cushing or Marsh Pool	917	27,510
Deep Rock (23-18-3)	1,320	39,600
Total	7,949	238,470
Lincoln County:		
Stroud	3,457	103,710
Davenport	19,160	574,800
Kendrick	2,282	68,460
Total	24,899	746,970
Kay, Grant and Noble Counties:		
Blackwell	2,563	76,890
Deer Creek	99	2,970
Ponca City	825	24,750
Mervine	337	10,110
Braman	7,937	238,110
Hubbard	2,085	62,550
Thomas	16,870	506,100
Tonkawa	42,319	1,269,570
Billings	359	10,770
Miscellaneous	270	8,100
Total	73,664	2,209,920
Garfield County:		
Garber	60,835	1,825,050
Carter County:		
Healdton	15,286	458,580
Hewitt	13,413	402,390
Graham	9,460	283,800
Fox	2,244	67,320
Brock	1,865	55,950
Tussy or Sholem Alechem	1,639	49,170
Total	43,907	1,317,210
Stephens-Cotton Counties:		
Loco-Milroy	23,38	70,140
Comanche	959	28,770
Duncan	6,460	193,800
Walters	974	29,220
Kilgore	163	4,890
Knox (2-2n-5w)	198	5,940
Total	11,092	332,760
Jefferson County:		
Hambro	2,001	60,030
Caddo County:		
Cement	1,608	48,240
Garvin County:		
Robberson	2,980	89,400
Beckham County:		
Sayre	106	3,180
Pontotoc County:		
Allen	240	7,200
Pottawatomie County:		
Maud	40	1,200
Marshall County:		
Madill	115	3,450
Total November	486,366	14,590,980
Total October	481,329	14,921,199
Difference	5,037	320,219

NORTH AND CENTRAL TEXAS

Daily Average and Total Monthly Production in November, 1925

North Central Texas:	Daily Av.	Month
Burkburnett	13,067	392,010
Electra	16,870	506,100
Iowa Park-K.M.A.	5,512	165,360
Archer County	31,992	959,760
Clay County	412	12,360
South Vernon	14,199	425,970
Montague County	801	24,030
Baylor County	323	9,690
Total	83,176	2,495,280
Central Texas:		
Clear Fork	6,643	199,290
Breckenridge	6,145	184,350
Caddo	3,918	117,540
Ranger-Eastland	5,841	175,230
Rising Star	97	2,910
Sipe Springs	169	5,070
Desdemona	2,132	63,960
Pioneer	680	20,400
Brown County	2,266	67,980
Callahan County	5,055	151,650
Coleman County	244	7,320
Throckmorton County	181	5,430
Jack County	54	1,620
Palo Pinto County	642	19,260
Shackelford	2,605	78,150
Reagan County (Big Lake)	28,821	864,630
Mitchell County	3,065	91,950
Scurry County	64	1,920
Total	68,622	2,058,660
Panhandle:		
Carson County	2,447	73,410
Hutchinson County	2,317	69,510
Wheeler	31	930
Gray	80	2,400
Potter	30	960
Total	4,905	147,150
East Central Texas:		
Mexia	15,139	454,170
Powell	37,849	1,135,470
Currie	1,204	36,120
Richland	2,963	88,890
Wortham	15,284	458,520
Total	72,439	2,173,170
Total all fields	229,142	6,874,260
Total October		etaoin

NORTH LOUISIANA

Daily Average and Total Monthly Production in November, 1925

	Daily Av.	Month
Bellevue	2,658	79,745
Caddo light	8,758	262,740
Caddo heavy	2,433	72,990
Cotton Valley	9,163	274,875
DeSoto and Red River	3,989	119,665
Elm Grove	627	18,802
Haynesville	11,988	359,635
Homer	6,114	183,410
Total November	45,730	1,371,862
Total October	47,999	1,487,941
Decrease	2,269	116,079

ARKANSAS

Daily Average and Total Monthly Production in November, 1925

	Daily Av.	Month
Smackover heavy	164,437	4,933,095
Smackover light	21,881	656,440
El Dorado	8,196	245,885
Nevada	1,374	41,205
Stephens	1,711	51,330
Total November	197,599	5,927,955
Total October	206,751	6,409,269
Decrease	9,152	481,314

DECISION EXPECTED ON OIL TAX INCREASE

The stage was set for an early decision in the appeal on the sufficiency of the signatures on petition No. 89, which proposes to raise the tax on gross production of oil in Oklahoma, when the State Supreme Court overruled the motion of Campbell Russell to dismiss the appeal which had been made by L. J. Milburn, W. C. Kite, Wirt Franklin, Edward Galt and P. H. Anderson, all of Ardmore.

In his motion to dismiss the hearing, which had already entered the final stages before Referee Wyley Jones, Russell contended that the hearing was not an original action, but merely an appeal and was without the jurisdiction of the Supreme Court. This same point is an issue in the free textbook case, which is now pending before the court and in this case Russell was on the opposite side.

In overruling Russell's motion to dismiss the case, the Supreme Court cast aside all impediments and the final decision is expected soon. The Supreme Court has advanced the appeal of Petition No. 89 over all routine matters and the speedy ruling on the Russell motion paves the way for the final ruling and conclusion of the entire case before the end of the present year.

The **ARMSTRONG**
All Steel Pipe Wrench
is the best seller in America

Because—it is a scientifically designed pipe wrench possessing many advantages over ordinary wrenches; it is made of the highest grade of steel and stands up splendidly under the hardest usage. Once a workman uses the ARMSTRONG, he'll never be satisfied with anything less. The biggest sales "repeater" on the market.

Built and Sold RIGHT

When you sell ARMSTRONG Pipe Wrenches to your dealers you have 30 years of reputation in good tool building behind your sale. And you KNOW you're giving them dollar - for - dollar value.

ARMSTRONG
Tools are Leaders
Write for special detailed descriptive circular. Sent free to all interested executives. Jobbers and mill supply heads are invited to request proof of the sales advantages of the ARMSTRONG BROS. TOOL CO. line.

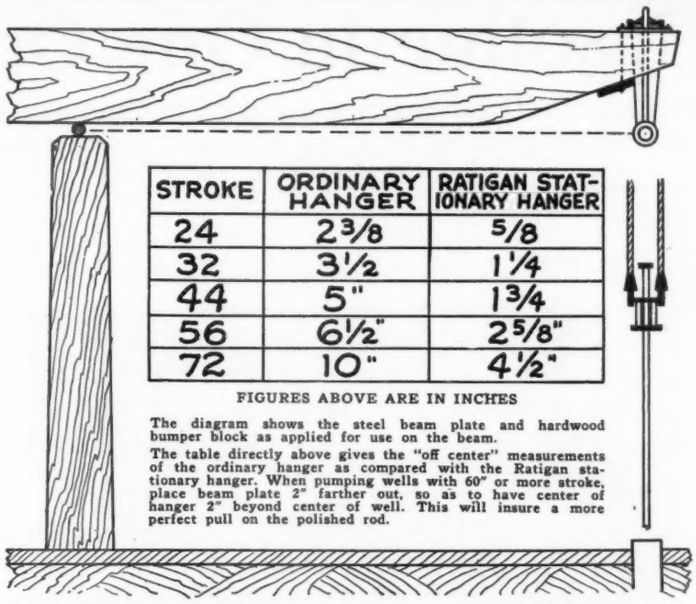
Tool Holders, Pipe Dies, Stocks, Vises, Chain Wrenches, Ratchet Drills, Drop Forged Wrenches, Lathe Dogs, Clamps, Drill Drifts and Vises, Planer Jacks, Etc.

MADE BY ARMSTRONG BROS. TOOL CO.

330 N. Francisco Ave. CHICAGO

No. 15 Sucker Rod Rotor with No. 1 Shock Absorber attached and No. 6 Polish Rod Grip.

No. 15 Sucker Rod Rotor and No. 6 Polish Rod Grip



STROKE	ORDINARY HANGER	RATIGAN STATIONARY HANGER
24	2 3/8	5/8
32	3 1/2	1 1/4
44	5"	1 3/4
56	6 1/2"	2 5/8"
72	10"	4 1/2"

FIGURES ABOVE ARE IN INCHES

The diagram shows the steel beam plate and hardwood bumper block as applied for use on the beam.

The table directly above gives the "off center" measurements of the ordinary hanger as compared with the Ratigan stationary hanger. When pumping wells with 60" or more stroke, place beam plate 2" farther out, so as to have center of hanger 2" beyond center of well. This will insure a more perfect pull on the polished rod.

The purpose of the steel beam plate is to insure a firm and level surface for the flat top hanger. The purpose of the bumper block is to force the hanger *out* on the up stroke, resulting in a more perfect pull at all times.

Ratigan Hangers are all interchangeable and may be used with any piece of Ratigan equipment without adjustment. All wearing joints are rocker joints, which means minimum wear and maximum life. There is nothing to oil.

RATIGAN'S "SURE-GRIP" GRIPE CLAMPS, BEAM HANGERS, SUCKER ROD ELEVATORS, SAFETY HOOKS, BELL NIPPLES, ETC.

J.P. RATIGAN

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No. 1 Shock Absorber attached to No. 1-A Hanger, and No. 6 Polish Rod Grip

No. 1-A Hanger with Adapter fitting and No. 6 Polish Rod Grip

Patented September, 1913, June, 1924

Reid Type PB 20-Foot Band Wheel Power

For Lubrication, *Clean* Oil

One of the most desirable features of the oiling system on Reid Band Wheel Powers is that it is so designed that at no time is the oil exposed to contamination by dust or sand in the air.

This feature is explained in our Bulletin No. 29—Write us for it.

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U. S. A.

BRANCHES AND AGENCIES: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal. Frick-Reid Supply Company, Tulsa, Okla., and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming.

BRANCH SHOP, TULSA, OKLA.

Obtain Gasoline in One Operation

90 Per Cent of the Total Output Secured in One Continuous Operation. Crude Used as Cooling Medium in Dephlegmator

The refinery of the Julian Petroleum Corp., located at Hynes, Calif., incorporates many features which are representative of manufacturing practices among California refiners. The plant was designed with the idea of compactness and economy along with the securing of a large "daily throughput" in a small installation. Increasing numbers of refiners are getting away from the old shell still type of distillation and performing this work on the more compact, efficient and less expensive tubular still method. In line with the tendency of the industry toward tubular retorts, the superintendent designed and installed a retort for the company which has proved both efficient and economical in operation. So satisfactory, in fact, that the second retort of this type was immediately added. Figure 1 shows the two tubular retorts so constructed and connected that they have the appearance of only one still.

Furnace Design

These stills are unusual in the design of the furnace and the method of conducting the heat through the still and into the stack. Referring to Figure 2, there is found a simple sketch of the method of construction. The still is fired through a six-"foot" dutch oven behind which there is a large combustion chamber. Peep holes provided at the rear of the still show positively that the lower tubes in the first tube bank are never touched by or exposed to direct flame. The brick arch as shown protects the forward section of the tubes and deflects the heat to the rear and upward where it meets the second arch.

The second and third arches, or baffles, that separate the three banks of tubes are made of what is commonly termed "damper stock"—a hard compressed asbestos board 2 inches in thickness. The baffles deflect and change the direction of travel of the hot gases three times before leaving the heating zone and entering the stack. The tubes are 3 inches by 20 feet long and 200 joints in each retort. The tubes are connected by return bends of the flange type and provided with plugs which are removed for inspection or cleaning of the tubes. It is claimed for these pipe stills and this type of furnace construction that in practice when a furnace temperature of about 1,800 to 1,900 degrees Fahrenheit is required to heat the charged oil to 450 degrees or higher, that the stack temperature is but a few degrees higher than the temperature of the heated oil. The fuel consumption is low for the pipe stills—less than 2 per cent.

Separator

These stills receive their charge from the heat exchanger, in at the top and out at the bottom, from there to the separator just back of the stills in Figure 1, where the fuel oil residuum is removed through the exchanger to storage. This residuum is prepared to specifications of 22 degrees A. P. I. gravity and 275 degrees Fahrenheit open cup flash. The separator, which is 8 feet by 20 feet in size, is equipped with the inverted cone type of fractionation device, which assures a sharp separation of light vapors from residuum. The vapors leaving the top of the separator enter the first tower, which is of baffle type—4 feet by 20 feet—acting as a further separative or "knock out" device. The condensate accumulating in this tower is removed or back-trapped into the two 350-bbl. shell stills—shown to the left in Figure 1.

The vapors then leave the tower and enter the dephlegmator, where they are cooled further and condensed by the coil device at the top of the dephlegmator through which cold crude is pumped as a cooling medium. The condensate formed in the dephlegmator is also back-trapped to the shell stills—the remaining vapors condensed and removed to run down as gasoline. As described above, the tubular retort vaporizes all the light fractions and finishes the fuel oil--90 per cent of the available gasoline in the crude is removed in this one operation with one heating. The back-trap products pouring into the shell stills are not allowed to cool, but are distilled again semi-continuously, yielding the last of the gasoline, the kerosene cut, (this being a rerun product under this method) and the still bottoms constitute what is termed a light fuel oil—27 to 28 degrees A. P. I. gravity. The stills, hot oil lines, and separators are all well insulated.

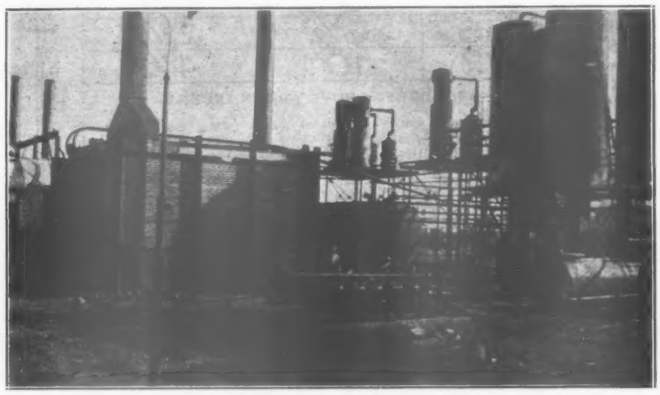

Fig. 1—Tubular retorts, separators, towers and dephlegmators and shell stills at Hynes, Calif., refinery of the Julian Petroleum Corp.

Two Grades of Crude

The refinery at Hynes usually operates on one or two grades of crude—either Athens or Signal Hill production. The production from the other fields is delivered by the pipe line department to the refineries at Vernon. The two grades of crude refined are quite different in their physical characteristics. The Athens crude, for example, ranges from 37 to 41 degrees A. P. I. gravity and yields a higher percentage of gasoline—40 to 46 per cent. When operating on Athens crude the approximate breakup or yields are about as follows:

	Pct.
Gasoline	43
Kerosene	9
Gas Oil (27-28)	8
Fuel Oil	40

The Signal Hill production, on the other hand, is of lower gravity, averaging about 25 degrees A. P. I., and yielding 21 to 24 per cent gasoline. The products of this crude are recovered approximately as follows:

	Pct.
Gasoline	24.0
Kerosene	12.5
Gas Oil (27-28)	10.5
Fuel Oil	53.0

Large Volume of Crude

Operating on Signal Hill crude the refinery, as described in the preceding discussion, handles a comparatively large volume of crude through such a small installation. Each retort or tubular still is designed for 2,500 bbls. of oil daily and they are operating at this figure, which gives a total of 5,000 bbls. through the equipment as shown in the illustrations.

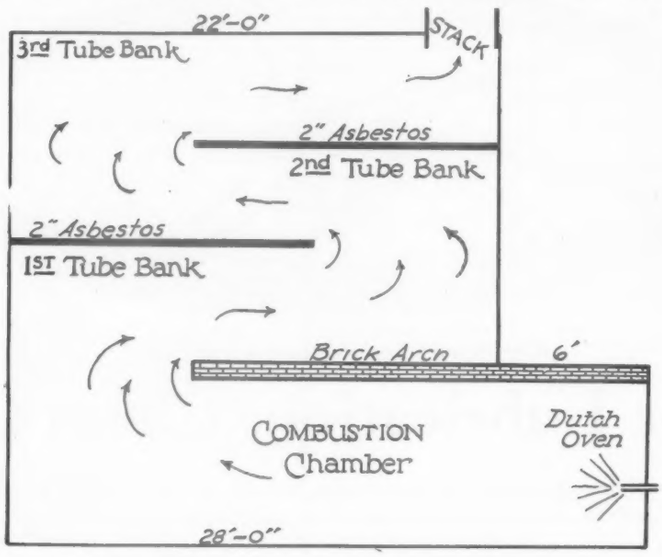

Fig. 2—Diagram showing construction of retort furnace.

The water cooling system at this plant is of interest because of its simplicity. Artesian wells deliver cool, soft water to the tank in which the cooling tower is built. The water is picked up by an electrically operated Dayton centrifugal pump at the rate of 800 gallons per minute—forced through the four condensers and returned to the top of the cooling tower—then into the pool below for recirculation. Two Dow steam pumps, 6 by 6 by 6, are installed as auxiliary water circulating equipment for use in event of the failure of electric power. The three Erie type, horizontal return tubular, 150 horsepower boilers in the plant powerhouse are vaporizing soft water from artesian wells.

Treating Problems

The difficulty encountered in treating distillates from California crudes has ever been an annoying problem. Gasolines from certain crudes turn pink upon exposure to sunlight. For example, Signal Hill crude gasoline has this tendency. Other crudes from other pools yield distillates that change color differently and with varying rates of speed and intensity. Some gasolines are recovered colorless and remain so. Generally the gasoline is acid treated, requiring 1 to 3 pounds of acid per barrel, depending on the source of the crude. It is said that the percentage of sulphur present in a given crude or a certain type of crude is an index as to the difficulty to be encountered in treating the distillates therefrom. The greater the sulphur content the greater the difficulty. Generally this is true, but in the case of the Signal Hill crude, which carries .7 per cent sulphur, the gasoline is much easier to refine chemically than that distillate recovered from Athens crude, which has only .5 per cent of sulphur. Usually the gasoline from either type of crude is treated at the Julian refinery with sufficient acid to insure brightness, neutralized with 10 degrees caustic, which is returned for reuse repeatedly. Then, after a slight wash with water the gasoline is given a shaking with a small quantity of California contact clay—which expedites the settling, bleaching, etc., and assures stability of color. The agitators are 350-bbl. capacity and are painted aluminum.

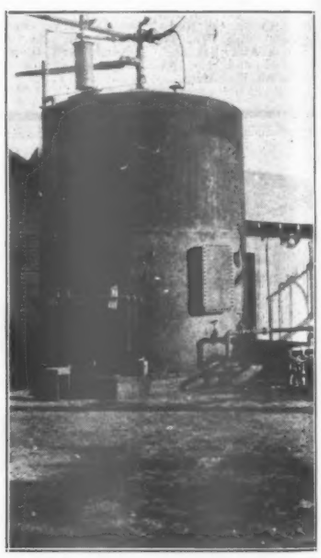

Fig. 3—View of electric dehydrator.

Gasoline Specifications

The refiner in the Southern California district is forced to meet two sets of gasoline specifications in the preparation of his product. The Los Angeles city specifications are required by the great majority of the communities in the southern part of the State and these specifications differ from those of U. S. Motor gasoline in that the 90 per cent cut

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must distill below 370 degrees Fahrenheit instead of 392 degrees Fahrenheit. This necessarily reduces the percentage of heavier ends present in the finished product and it seems certain, according to late developments and experiments in scientific refining practice that along with decreasing the recovery of gasoline for the refiner, that the motorist does not get as powerful a motor fuel as that produced in accordance with the United States Bureau of Mines' specifications.

Dehydrating Equipment

For dehydrating flush production from the Signal Hill district the company has installed a Western Electric dehydrator, as shown in Figure 3. The flush crude from new wells often runs 20 per cent or more in B. S. and mud and it is the work of the dehydrating plant to break the emulsion carrying the water, etc., and to cause the foreign matter to settle out, thus cleaning the crude to about 2 per cent B. S. California pipe lines generally accept oil at 3 per cent B. S. The rate of dehydration necessarily varies with the percentage of B. S. and emulsion to be removed. The apparatus picture in Figure 3 is designed for 1,500 to 2,000 bbls. daily. The oil is preheated by steam heat before it enters the enclosed and air tight tank. In this tank are two cone shaped electrodes, one permanently attached and the other variable—governed by a hand lever and controlled in its position by the operator. The hot oil from the steam preheater enters the tank at the bottom, is subjected to the electrical treatment which causes the breaking up of the emulsion and settling out of the B. S., etc. The temperature during operation is generally 180 degrees Fahrenheit. The water and foreign matter is drawn off at the bottom of the dehydrator while the clean oil is forced out of the top of the tank and conducted to closed storage for cooling. The treatment, in breaking up the emulsion, usually is profitable to the owner in that he purchases the oil at, say, "20 per cent cut," and in breaking the emulsion reclaims possibly enough good oil to more than defray the expense of treating or dehydrating it.

WORLD OIL RESERVES AND THEIR DEVELOPMENT

(Continued from Page 70)

ration" point where everyone has a car who can possibly use one—there would still be left enormous possibilities for growth in other parts of the world. The United States with a population of 105,000,000 is consuming over 60 per cent of the world's oil and nearly 75 per cent of the world's petrol, while Europe with a population of 485,000,000 consumes only 10 per cent of the oil and 12 per cent of the petrol. The per capita annual consumption in the United States is 69.3 gallons, compared to 11.6 in England, 9 in Denmark, 7.5 in France, 5.9 in Sweden and 2.4 in Germany. Obviously, with the gradual recovery from the strain of devastation of the war, these figures for Europe will undergo a rapid increase. Already in the past three years European consumption, especially in the West, has made remarkable gains. The percentage of increase of petrol consumption in 1924 over 1923 was for England 28 per cent, for France 12, for Belgium 37, for Holland 50, for Germany 40. And this is only an indication of the far greater development to come. Much the same is true of South America, and even of Asia and Africa, where the use of petroleum products for power and for light and heat is advancing with giant strides.

An International Industry

Oil men are thus in the happy position of dealing with a commodity which is produced in immense quantities at comparatively low cost, and which all the world needs and will go on needing in greater and greater measure. Whatever may be the difficulties of the industry today from increased production, there can be no question that the future is full of hope and promise. The one thing necessary is that we should go on working, with a keen sense, not only of our opportunities, but also of our responsibilities. The oil industry is in the widest and best sense an international industry, and its larger problems must be approached in an international spirit. Oil has become a vital requirement for every civilized country and there is room for the oil men of all nations in the great task of supplying it. It is pleasant to be able to record my personal conviction, based on a long and extensive experience of the industry, that the old bitterly competitive spirit is rapidly and everywhere giving way to a new and better spirit of fair play and of mutual trust and cooperation, based on the lines of reducing as far as possible costs to the consumer. In that lies the best hope for the industry and for all of us.

GETTING OIL WORKERS FOR FOREIGN FIELDS

(Continued from Page 70)

ent of transferring men who are desirous or willing, from domestic to foreign fields. Also labor is often transferred from one foreign country to another, as from Mexico to Venezuela, for instance. This can be done advantageously where actual operations are reduced at one point and increased at another simultaneously, and the need of discharging men or of obtaining new ones is done away with.

The policy of the average oil company operating abroad is to get the best men possible, as economically as possible and as quickly as possible. It would be cheaper to get men on the Gulf Coast for service in Mexico, Colombia or Venezuela than to pay their expenses from New York or California, or from the Mid-Continent to New York and thence to South America. New York, however, is the natural starting place from the United States to such fields as those of Europe, Africa or Asia.

The custom is for the company employing men in the United States for foreign fields to pay their fare to the fields, but they must guarantee to stay there a certain length of time. In Mexico the period required is usually nine months, but it is longer in other countries as a rule, ranging up to two years.

Living Conditions Abroad

Living conditions vary in different foreign fields, but the major operators make a point of making them as favorable as possible. Naturally they are limited by circumstances. Workers in new territory often must be real pioneers, cutting into the wilderness to establish new camps and to drill the first wells miles from civilization. Later, however, roads are constructed and communication established so that modern conveniences, when practicable, can be supplied. Each company maintains its own camp. In Venezuela most of the camps are real communities where the men sleep, eat, and may purchase their necessary supplies. Often living conditions are better in the camps than in the native cities.

It must be remembered, however, that field men going to foreign countries without having previously made connections must put up with conditions in the native towns, which are as a rule very different from conditions in American towns.

Climatic conditions consitute the chief obstacle to Americans in some foreign fields, where low, marshy country is the rule, and where fever is prevalent at certain periods of the year.

It is pointed out in all justice, however, that in some foreign fields living conditions are better than in some fields in the United States. A rush to new oil territory in this country often brings in its wake frightful conditions temporarily. The same would be true any place. Mexico has had similar experiences.

No foreign field has had a rush of oil field workers like Mexico has at times. At one period in the development of the Mexican oil industry there was actually a big surplus of American drillers and other workers, and of course under these

circumstances there was no need to send to the United States for men.

There is no question that the foreign field offers a growing opportunity for the American driller or other field worker, but the wisdom of picking carefully and getting a suitable connection in advance cannot be overemphasized.

FOREIGN RESOURCES OF OIL SUMMARIZED

(Continued from Page 78)

reserves estimated by the Commttiee of Eleven of the Amercan Petroleum Institute to be obtained in the United States from present wells and proven areas by flowing and pumping.

This estimate may be high, but considering Russia as a whole, there is considerable probability that the total oil reserves may be greater than those of the United States. The remainder of Russia, outside of the southwestern area, has been very poorly prospected, although oil has been found from the Arctic Ocean to Baku, and as far East as the Cobi Desert. Furthermore, practically nothing is known of Siberia and there is every probability that in such a widely extending area, oil will be found in considerable quantities.

Persia

Persia occupies fourth place in the world production. Production by years is shown in Table VI, the increase in Persia production in a few years has been enormous, and is very rapidly increasing. Two oil fields have been developed, only one of which is producing. Both of these fields are controlled by one company, and immediate future production will depend very largely upon the policy adopted by this company. The chairman of this company in his report of November 25, 1924, stated that production at that time was at the rate of 34,650,000 bbls. per year, which was the maximum quantity they were then able to dispose of, and much of the production had been closed in. He also stated that the company's production could be brought up to 77,000,000 bbls. per year by opening of existing wells and could be furthermore augmented within a few months by additional drilling.

The Persian field is very similar to the Mexican fields in having wells of large individual production, one well having produced 46,000,000 bbls. since 1911. In average production per well, it is the richest oil field in the world. It is probable that production will continue undiminished and will undoubtedly increase for some time to come, the only possible danger being water encroachment similar to that encountered in Mexico. Up to the present time, no water has been found.

TABLE VI
Persia Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Production
1913	1,857
1914	2,910
1915	3,616
1916	4,477
1917	7,147
1918	8,623
1919	10,139
1920	12,230
1921	16,673
1922	22,247
1923	26,950
1924	32,373

Dutch East Indies

The production of the Dutch East Indies, which holds the next place in oil production, is shown by years in Table VII. The production here is increasing gradually and undoubtedly would increase to a greater extent were it not for Gov ernment and Legislative interference. It is conservatively believed, however, that the Dutch East Indies will probably continue to produce at least the present rate for a long period of time.

TABLE VII
Dutch East Indies Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Prod.	Year	Prod.
1893	600	1909	11,042
1894	688	1910	11,031
1895	1,216	1911	12,173
1896	1,427	1912	10,846
1897	2,552	1913	11,172
1898	2,964	1914	11,422
1899	1,796	1915	11,920
1900	2,253	1916	12,547
1901	4,014	1917	13,180
1902	2,430	1918	12,778
1903	5,770	1919	15,508
1904	6,508	1920	17,529
1905	7,850	1921	16,958
1906	8,181	1922	16,720
1907	9,983	1923	19,868
1908	10,283	1924	20,473

Rumania

Production in Rumania is shown in Table VIII. While a drop will be noted during the latter part of the war, it will be seen that the 1924 production is practically up to the previous maximum production of 1913. Increase in production in the immediate future is hampered by Government interference, as, for instance, the requirement that new grants of oil lands will be made to companies having at least 50 per cent Rumanian control. It seems probable that there will be, however, irrespective of legislation, no large increase in production, but that the present production will continue for a number of years to come.

TABLE VIII
Rumania Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Yr.	Prod.	Yr.	Prod.	Yr.	Prod.
1857	2	1880	114	1903	2,763
1858	4	1881	122	1904	3,599
1859	4	1882	137	1905	4,421
1860	9	1883	159	1906	6,378
1861	17	1884	211	1907	8,118
1862	23	1885	193	1908	8,252
1863	28	1886	169	1909	9,327
1864	33	1887	182	1910	9,724
1865	39	1888	219	1911	11,107
1866	43	1889	298	1912	12,976
1867	51	1890	383	1913	13,555
1868	55	1891	488	1914	12,827
1869	59	1892	593	1915	12,030
1870	84	1893	536	1916	8,945
1871	90	1894	507	1917	3,721
1872	91	1895	575	1918	8,730
1873	104	1896	543	1919	6,614
1874	103	1897	571	1920	7,435
1875	109	1898	776	1921	8,368
1876	111	1899	1,426	1922	9,843
1877	109	1900	1,629	1923	10,867
1878	109	1901	1,678	1924	13,303
1879	110	1902	2,060		

Venezuela

The Venezuelan production is shown in Table IX, and is confined practically to the last four years. This production, which reached 9,000,000 bbls. in 1924, is mainly from the Maracaibo Basin. It is estimated that production for 1925 will be about 20,000,000 bbls., and that this production will increase for a number of years to come. The Maracaibo Basin is located on tide water, and the southern interior of the country is practically untouched. It is possible that reserves will be found here in even greater quantities than in the Maracaibo district.

TABLE IX
Venezuela Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Production
1917	120
1918	333
1919	425
1920	457
1921	1,433
1922	2,201
1923	4,059
1924	8,754

India

The Indian production, which is almost entirely from the Burmah Field, as shown in Table X, has remained practically constant for a number of years back. It is believed that the Indian production has about reached its limit, and that the development of new producing areas will not much more than offset the decline in the Burmah Field.

TABLE X
India Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Prod.	Year	Prod.
1889	94	1907	4,344
1890	118	1908	5,047
1891	190	1909	6,677
1892	242	1910	6,138
1893	299	1911	6,451
1894	327	1912	7,117
1895	372	1913	7,930
1896	430	1914	7,410
1897	546	1915	8,203
1898	542	1916	8,491
1899	941	1917	8,079
1900	1,078	1918	8,188
1901	1,431	1919	8,736
1902	1,617	1920	8,375
1903	2,510	1921	8,734
1904	3,386	1922	8,529
1905	4,137	1923	8,320
1906	4,016	1924	8,159

Peru

Peru has been producing consistently for a number of years past as shown in Table XI. The increase has geen gradual, but the oil is of high grade, is of light gravity, high gasoline content and produces, in general, excellent lubricating oil. The production is confined entirely to a small area on the coast, and the interior has not as yet been prospected. There are good reasons to believe that much greater production will come from the interior. However, this may be hampered by topographical diffi-

(Continued on Page 198)

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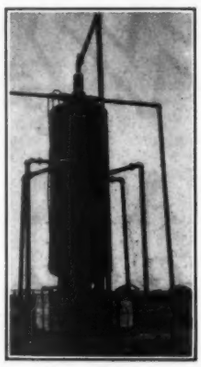

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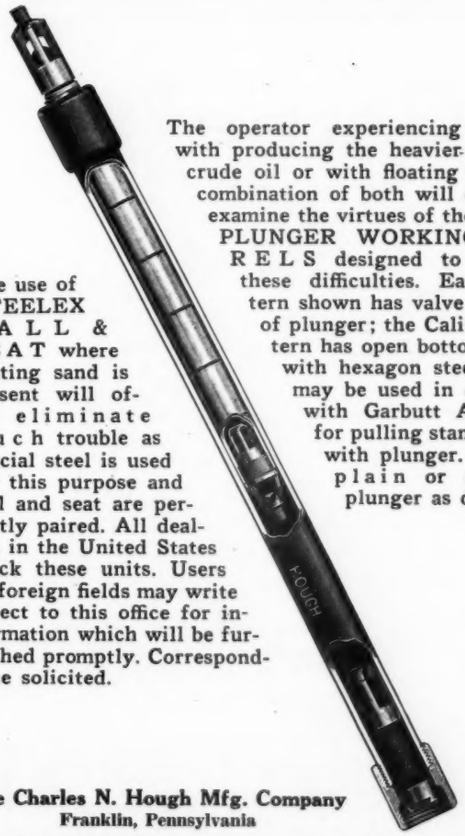

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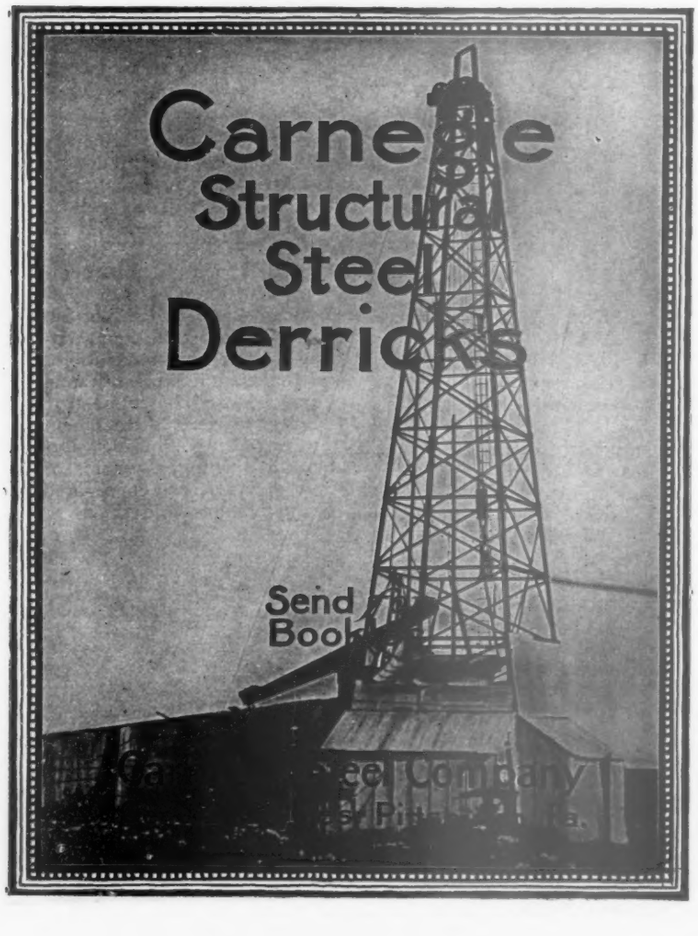

VENEZUELA OIL NOT CONSIDERED MENACE

(Continued from Page 87)

field brought in since the completion of the discovery well in Concepcion in January, 1924. Considering the extensive area in the Basin within the "quadrangle" marked by producing fields, there has been, comparatively speaking, very little wildcat drilling in Venezuela. A decided increase in such exploratory work will be under way in 1926, and it is reasonable to expect that new producing fields will be discovered in that year.

The following outline of activities of various companies in this direction will be interesting not only to the shareholders of the various land companies whose properties are involved, but to the oil industry in general. For the convenience of the reader we will describe these developmnts in the Basin by districts: Paez, Mara, Urdaneta and Perija, running from north to south, west of the lake; and Miranda, Buchivacoa, Democracia, Bolivar and Sucre, from north to south, east of the lake, and south of the lake, in the State of Merida.

West

Paez—There is a boundary dispute between the Maracaibo Oil Exploration and the Maxudian Petroleum on lands in this district. A well is likely to be drilled here upon the settlement of this controversy. The Andes Petroleum own large acreage here, under contract to the Atlantic Refining.

Mara—In this district a well is being drilled by the Gulf Oil, in joint account with the Oronoco (Pure Oil) on Maracaibo Oil Exploration leases. The Oronoco Co. owns extensive concessions in the immediate vicinity. The Caribbean Petroleum some time ago drilled a well here at Km. 24, and was said to have gotten a very considerable flow of gas. In the extreme east of this district, the Standard (New Jersey), is drilling a well at Palmarejo near the shores of the Maracaibo Straits. A gas show has been encountered. Tools lost in this hole at a depth of 3,500 feet have only recently been gotten out and drilling is under way. The Texas Co. and Creole Syndicate own acreage in the immediate vicinity.

Urdaneta—Drilling will start shortly in this district, near the shore of the lake by the Omnium Co. The Gulf owns the Marine Zone strip here and the Pantepec and Texas own the properties adjoining to the west. The Venezuelan Petroleum, Standard (New Jersey), American Maracaibo and Venezuelan Holding also have acreage in this district. Drilling is to be done by the Gulf Oil and Standard (California) on the Venezuelan Petroleum leases.

Perija—The Standard (New Jersey) is drilling a well on the Maracaibo Oil Exploration leases in the extreme southwestern part. The Standard (California) is surveying and geologizing the La Novedad leases of the Condor in the central part, preparatory to drilling. The Standard (California) will also drill on properties of the Venezuelan Petroleum. The Gulf Oil, Pantepec, Lago, Texas, New England Oil, Venezuelan Holding and American Maracaibo own acreage, in addition to the companies mentioned above.

East

Miranda—The Gulf Oil recently purchased acreage in the southeastern part of this district from the Maracaibo Oil Exploration. This rounds out the holdings of the Gulf in this section. The well which is to be drilled within a year on this property, is interesting from the fact that drilling for the past year by the B. C. O., Ltd., at El Mene has been extending the proven area of that field to the southwest. It is possible that the Gulf drilling may prove the El Mene structure to extend into the district of Miranda. Maracaibo Oil Exploration, Caribbean Petroleum, Standard (New Jersey) and Oronoco own concessions in this vicinity.

Buchivacoa—The B. C. O., Ltd., owns the concession on this entire district, which is divided into three areas. The company itself has developed a produc-

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tion of about 7,500 bbls. per day at El Mene in the western area. The central area is under drilling contract to the Venezuela Central Area Oilfields, Ltd., who are to drill four wells. And the Standard (New Jersey) has a drilling contract on the eastern area. This extensive property is being systematically explored, five strings of tools being employed in the work. The B. C. O., Ltd., is drilling a deep test southwest of the El Mene Field about 4 miles from the present proven area.

Democracia — This district adjoins Buchivacoa to the eastward. The Standard (California) and the Beacon-Sun own very extensive concessions. Drilling for the joint account of these two companies will be started about 2½ miles north of Urumaco in the very near future. Geological work is said to have demonstrated very favorable structures here. The Pantepec, Venezuelan Holding and Caribbean companies own acreage here.

Bolivar—The V. O. C. is rigging up one well and has made several locations at Mene De Lagunillas, about 7 miles inshore from Lagunillas. Spectacular seepages and other geological evidences of oil accumulation have determined this development. Lago, Creole, Gulf and Venezuelan Petroleum own the Marine Zone strips along this coast. The Gulf, on property of the last named company, is drilling at Lagunillas. The Maxudian Co. owns two small parcels north and east of La Rosa between the Creole leases Niansa and Niasa, and Huron and Erie. These properties are under drilling contract to the Unity Petroleum under the terms of which drilling must commence early in 1926 on one of these parcels.

Sucre—By arrangement with the New England Oil Co. the Standard (California) will continue the drilling at Neogil. Favorable showings were encountered in this hole, drilling of which was stopped some time ago by a fishing job. Standard (California) will also drill in this district on properties of the Venezuelan Petroleum. The New England is drilling in the Rio Pauji Field where one small producer has already been brought in. The Gulf is drilling on its second location at Menito, and the Beacon-Sun is drilling at Boscan and is likely to resume drilling at Mototan. Standard (New Jersey), Pantepec, Lago, Venezuelan Holding, American Maracaibo, Mene Grande Oil Corp., in addition to the above companies, own acreage in this district.

South

In the State of Merida, south of the lake and near the end of the railroad at El Vigia, the Beacon-Sun is putting down a deep test. The Standard (New Jersey) and Gulf own concessions in the vicinity.

The Cia. Venezolana de Petroleo which deals in the National Reserves, controls large acreage in all of the districts.

Monagas

The Standard (New Jersey) is systematically exploring its very extensive concessions in this State with six strings of tools. Heavy oil has been encountered in two holes in the course of this work. The Bernudez Co., subsidiary of the General Asphalt, has completed three producing wells in the State of Sucre, just over the Monagas line. The following companies own properties in Monagas: Standard (California), Gulf Oil, Caribbean Petroleum, Lago, Pantepec, Venezuelan Holding, the Meyer interests, etc.

There is considerable surveying and geological work being done in Central Venezuela, principally in the States of Anzoategui and Guarico. The Gulf, Andes Petroleum (Atlantic Refining), Meyer interests, Maxudian, own properties in this section. On the properties of the latter company, in the district of Cajigal, State of Anzoategui, the Union Oil Co. of California has an option on a drilling contract.

The status of wells discussed above, as of November 1, is as follows:

Gulf (at Menito), No. 2, drilling at 100 feet. (At Punta Icotea), Ridriguez No. 1, abandoned at 3,752 feet. (In Mara), Maracaibo Oil Exploration lease, standing. (At Lagunillas), on Vene-

(Continued on Page 196)

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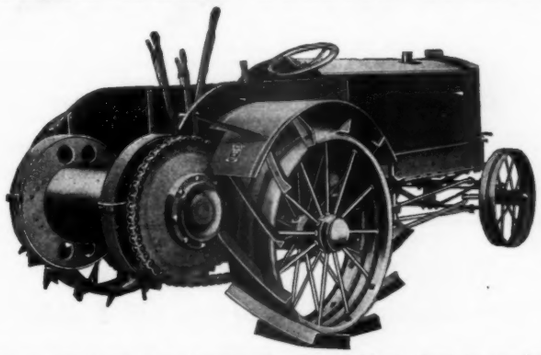

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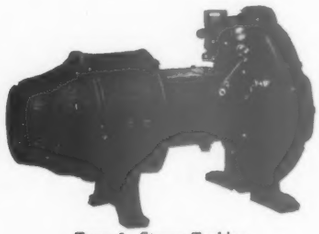

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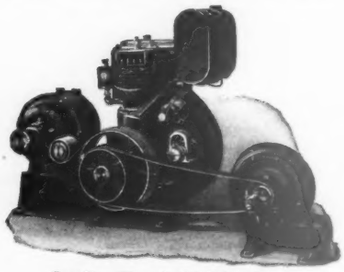

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England Gets Most Of Russia's Oil; Near East Declines

Reprinted from the official organ of the "Azneft."

The tables and figures below show very clearly the export of oil from the Union Socialist Soviet Republics for the past two and a half years, as compared with that of 1913.

The first table gives the distribution to various foreign countries in round figures of thousand poods (a pood equals 36 pounds) the second in per cents.

Countries of Impor	1913	1922-23	1923-24	1st half 1924-25
England	11,782.1	8,289.2	19,674.3	11,267.0
Germany	3,906.9	1,887.8	4,026.9	3,396.5
France	4,613.8	1,994.5	2,037.0	1,992.9
Italy	1,597.6	571.3	1,729.2	4,250.7
Turkey	6,535.5	31.5	1,497.2	433.1
Belgium, Holland	5,851.9	170.8	1,516.4	1,207.0
Bulgaria	1,050.2	.....	117.5	195.7
Other countries	2,507.5	434.1	1,458.8	2,023.8
Total	37,845.5	14,079.2	32,057.3	24,766.7

Countries of Import	1913 %	1922-23 %	1923-24 %	1st half 1924-25 %
England	31.1	59.6	61.4	45.5
Germany	10.3	13.4	12.6	13.7
France	12.2	14.2	6.3	8.1
Italy	4.2	4.1	5.4	17.1
Turkey	17.3	0.2	4.7	1.8
Belgium and Holland	15.5	5.5	4.7	4.9
Bulgaria	2.8	....	0.4	0.1
Other countries	6.6	3.0	4.5	8.1
Total	100.0	100.0	100.0	100.0

Near East Falls Off

These figures show that the Near East, which received such a large proportion of the export of Russia in pre-war time has lost its significance: In 1913 the exports from Russia to Turkey and Bulgaria totaled 20 per cent of the gross exports from Russia, while for the first half of the present fiscal year this per cent fell to 2.6, but it is necessary to mention that a part of the oil products exported to England is, in fact, reaching the countries of the Near East through the channels of both the Shell and the Standard companies.

But even with this reservation the present oil trade with England exceeds that of pre-war times very considerably. The analogous happening can be seen also in the case of both Germany and Italy. The export of oil products to France was in the first half of 1924-25 still behind that of the pre-war figure in round numbers, as well as in the percentage of the total export. But in the last few months the Soviet Republics have closed a number of large contracts (with the "Petrofine Francais," the naval ministry and others) to supply the oil products for France. The fulfillment of these contracts will undoubtedly raise the export from Batum to France, to a total exceeding that of 1913, and will bring France's percentage of the total export from U. S. S. R. up to the pre-war figures.

The oil trade with both Holland and Belgium is lagging considerably behind the pre-war trade. The trade with the other countries (Far East, Pribaltic States, etc.) had reached 80 per cent of the pre-war total in these countries (in the first half of this fiscal year).

Thus, with the exception of oil producing countries, like Poland and Rumania, the European countries are consuming mostly Baku oil products, and, with the exception of Turkey, this consumption is constantly increasing. The constant increase of the number of new foreign concerns with whom the Soviet Nephtesyndicat is closing deals, only confirms the previous statement.

After signing with the Shell, the pioneer in the matter of rebuilding the trade relation with the nationalized Russian oil industry, the Nephtesyndicat signed, in the present year, contracts to furnish 150,000 English tons of kerosene to one Anglo-American company (affiliated with Standard), 52,500 metric tons of benzine and lubricating oils to "Petrofine Francais," 78,000 tons of naphtha and 37,000 tons of other oil products to an Italian concern, "Societa National Oli Minerali," not mentioning a series of other contracts with English, German, French and Italian oil com-

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panies, not counting the separate deals with French naval and Italian military ministries. To specify what the oil trade with individual countries consists of, it should be mentioned that England is the main consumer of kerosene, solar and machine oils; France is interested mainly in naphtha and machine oils; Germany demands mostly oils, solar, machine and spindle; Italy buys in Batum naphtha and benzine and some lubricating oils, kerosene, benzine, lubricating oils and gas oil find a market in Belgium and Holland, and in Turkey, Bulgaria and other countries of the Near East to the U. S. S. R. is exporting mainly kerosene.

JAVA'S SHALLOW SAND HAS UNUSUAL FEATURES

(Continued from Page 87)

ter was arrested by the outburst of volcanic activity, either by the killing of the vegetation or more probably by the raising of the land above sea level. There is little doubt that the oil of this region is derived from the decomposition of vegetable matter entombed in the Miocene strata, and it is exceedingly probable that the same is true of those of the Eastern Java.

Hot Springs

Messrs. Fennema and Verbeek record numerous occurrences of hot springs throughout Java, and have recognized three groups:

1. Those associated with volcanoes.
2. Those associated with petroleum and gas, all of which are rich in salt, and some carry appreciable quantities of NaI and Na Br.
3. Those with no sign of petroleum and containing salt and a relatively large amount of calcium chloride.

The first group are always in proximity to volcanoes, either in the active or solfataric stage. These waters are characterized by the low percentage of solid matter, which averages about 4.5 parts per thousand.

The second group occur principally in the proved petroliferous belt between Semerang and Sourabaya, and except the one at Grobogan, where they issue from the quaternary beds, are from the Miocene strata. Three springs yielding iodide and bromide are found near Sourabaya at Kalangiar, Goenoekaratoe and Kedoengwaroe. The following analyses are taken from Messrs. Fennema and Verbeek's work:

	Kalangiar	Goenoekaratoe	Kedoengwaroe
Na Cl	24.10	23.92	26.25
CO_3 and SO_4	1.79	1.94	.....
Na I	0.11	0.12	0.171
Na Br	0.09	0.03	.....
Solid matter per 1,000	26.69	26.01	29.171

A number of hot springs of this group have been worked for common salt, and in 1895 in the Miocene hills extending from the river south of Sourabaya westwards towards Semerang yielded 916,425 kg. of salt. Similar springs are found to the west in Cheribon and Krawang. The third group are characterized by their high percentage of calcium chloride and are found in three widely separated localities. The following analyses are given by Messrs. Fennema and Verbeek:

	A.	B.	C.
NaCl	83.59	5.31	12.7
CaCl	24.70	6.09	5.5
Solid matter per 1,000	118.29	11.86	19.5

B from Keboedanas, near Buitenzorg.
B from Alian in Beguelen.
C from N. E. of Poerworedoe, Beguelen and Banjoemas boundary.

In the Tji Asem area there are a number of hot springs. Many of these were undoubtedly associated with the volcano, Tangkoeban Prahoe. They invariably issue from under the basaltic lava flows, and several of them are associated with tufaceous deposits of calcium carbonate, which is undoubtedly derived from the decomposition of the felspars of the lavas.

The occurrence at Tji Baroeboes is unique and deserves special notice. Here are numeruos hot springs issuing from the alluvial flat at the junction of two streams near Batoe Gede. From the rice lands here there are also intermittent emissions of carbon dioxide gas. A short distance away there are emissions of

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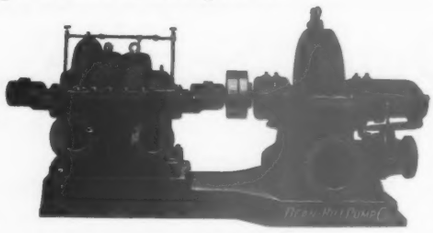

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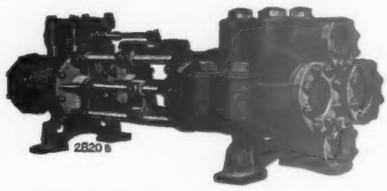

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sulphuretted hydrogen gas, and from the Miocene strata exposed in the stream bed there are intermittent emissions of natural gas with a little oil. It was difficult to decide into which of the above categories these springs should be placed. The geology of the area is difficult, as the outcrops of the Miocene beds are few, only being found where the bed of the stream has cut sufficiently deep to cut through the overlying volcanics, which are partly of the older and partly of the recent subdivisions. A careful examination proved the presence of a north and south fault, which had occurred earlier than the recent volcanic period. Into this fault plane there was intruded a felspathic breccia, the felspars of which were decomposed into kaolin. The sulphuretted hydrogen emissions were in this breccia and in the line of this fault only. This rock was also found on the north side of the G. Njomot range, but here there were no gas emissions. The association of the carbon dioxide and oil is undoubtedly fortuitous. The oil is derived from the sandy clays of the transitional beds between the clay shale group and the breccia beds; the carbon dioxide and sulphuretted hydrogen is from the volcanic source and with the hot waters have percolated along the line of the fault from the Tangkoeban Prahoe area and come to the surface in this the first valley to the north cut through the recent volcanics.

Sulphur and Gypsum

The only sulphur known in Java is that found in the craters of some of the volcanoes. Small deposits of this mineral are found in the fumaroles in the craters of Tangkoeban Prahoe.

No beds of gypsum have been discovered in the inland, but some clay shales in Cheribon contain small crystals of this mineral.

VENEZUELA OIL NOT CONSIDERED MENACE

(Continued from Page 193)

zuelan Petroleum lease, reaming at 2,110 feet.

Standard (New Jersey) (at Palmarejo), drilling at 3,700 feet. (At Esperanza), on Maracaibo Oil Exploration lease, fishing. (In Eastern Buchivacoa), Agua Viva, drilling at 2,100 feet. El Alambre at 2,600 feet. Marcunare at 2,600 feet. La Danta at 2,600 feet. Vicentote at 580 feet. (In Monagas), Monat, standing. Moneb, standing. Monaq, drilling at 2,700 feet. Monek at 1,300 feet. Sucax at 830 feet. Sucek, rigging up. Monav, spudding in.

Standard (California) (in Democracia), moving in at Urumaco. (At Neogil), on New England Oil lease, preparing to clean out. (In Perija), preparing to explore with testing rotaries La Novedad property of Condor and Venezuelan Petroleum leases.

V. O. C. (at Mene de Lagunillas), El Mene well rigging up.

Omnium (in Urdaneta), moving in.

Beacon-Sun (at Onia), drilling at 3,000 feet. (At Boscan), drilling at 2,200 feet. (At Motatan), standing at 600 feet. Testing with portable rotaries.

New England (at Rio Pauji), standing.

Transportation

Very little has been heard recently of the so-called "transportation problem" in connection with the Venezuelan oil fields. Over 8,000,000 bbls. of oil were moved in 1924, and about 20,000,000 bbls. will be moved in 1925.

During the present year important progress has been made in developing a standard type of lake tanker, a broad-beamed shallow draft steel vessel, with carrying capacity of approximately 15,000 bbls. of oil over the sand bars, across the entrance to Lake Maracaibo. The Royal-Dutch, Lago and Gulf have built during the year a fleet of this type of vessels adequate to move a production of 20,000,000 bbls. per year. Additions are being made to these fleets to provide for increased production in 1926. The Gulf Company has equipped an ocean-loading terminal in Las Piedras Bay in the Paraguana Peninsula, and the Lago, a similar one on the Dutch Island of

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Aruba, both of which are very much nearer to the producing fields than the Royal-Dutch terminal on the Dutch Island of Curacao.

Refining

The Caribbean Petroleum (Royal-Dutch) operate a modern refinery with a capacity of about 2,500 bbls. per day of crude at San Lorenzo, the lake port of the Mene Grande Field. Fuel oil produced here is largely used by the company's tanker fleet, while the gasoline and kerosene are sold in Venezuela and the West Indies.

The Lago Co. has built a 1,000-bbl. topping plant at Salina terminal (La Rosa), which provides fuel oil for the tanker fleet. This company has just acquired warehouse facilities, etc., in Caracas, and will actively enter the barrel gasoline and kerosene trade in Venezuela.

The Royal-Dutch operates a 50,000,-bbl. lub plant with cracking unit in the Dutch Island of Curacao. A considerable amount of crude is transshipped here. The gasoline and kerosene produced are sold largely in the United States, while the fuel oil and lubricating oils are shipped to England and the Continent.

Land Holding Companies

Owing to the initial expense incident to operating in a new field in the tropics, actual development work in Venezuela has very largely been confined to the "world oil organizations." It is likely that this will continue for several years until a market for crude outside of the present operating companies is developed in Venezuela, and until wagon roads are built throughout the oil regions and machine shop facilities and supply markets are available to smaller operators.

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In consequence of the above situation a form of corporate activity somewhat peculiar to the Venezuelan situation has developed in the "land holding companies." These concerns are well financed and control in the aggregate a very large area of the "probable" oil territory. In many cases they have made drilling contracts with the large companies. The following is a partial list of these companies with their affiliations up to the present time: Creole Syndicate (Gulf Oil), Maracaibo Oil Exploration (Standard of New Jersey and Gulf Oil), Carib Syndicate (Royal-Dutch), Venezuelan Petroleum (Standard of California and Gulf Oil), Maxudian Petroleum (Unity Petroleum), Andes Petroleum (Atlantic Refining), Pantepec Petroleum, American Maracaibo, Mene Grande Oil Corp., Maritime Oil, Cia. Venezolana de Petroleo, Meyer interests, etc.

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The Carbondale Machine Co., of Carbondale, Pa., has distributed two new bulletins. Bulletin No. 825 is devoted to the Carbondale compression refrigerating system, particularly to horizontal ammonia compressors. Bulletin No. 925 describes the function of vertical refrigerating machines and their installation in places where a smaller type of machine will suffice. This smaller type of machine has been developed as a result of the success which followed the operation of the larger type compression systems.

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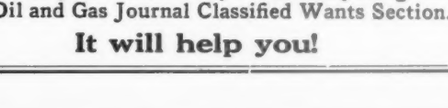

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FOREIGN RESOURCES OF OIL SUMMARIZED

(Continued from Page 191)

culties. Beyond question, there is a large oil reserve in Peru.

TABLE XI
Peru Production by Years
(In thousands of barrels of 42 U. S. gallons.)

Year	Prod.	Year	Prod.
1896	48	1911	1,368
1897	71	1912	1,751
1898	71	1913	2,133
1899	89	1914	1,918
1900	275	1915	2,487
1901	275	1916	2,551
1902	287	1917	2,533
1903	278	1918	2,527
1904	346	1919	2,628
1905	448	1920	2,817
1906	536	1921	3,699
1907	756	1922	5,314
1908	1,011	1923	5,699
1909	1,316	1924	7,812
1910	1,330		

Other Countries

In other parts of the world having considerable oil reserves:

In Argentina, the production has been hampered by Government interference.

Bolivia, also, has oil, but here topographical difficulties have retarded exploitation up to the present.

Africa is untouched, except for Egypt, and while it is not believed that this country is particularly inviting, and that it will not compare as a producer with Russia or the United States, it is nevertheless probable that oil will be found.

China is practically untouched. It would seem impossible that so large an area will not produce oil, although the effect of China's production on the gasoline situation in this country is somewhat doubtful, due to the very large population, which will undoubtedly absorb this oil locally.

New Zealand and also Australia are possible, although Australia's importance may be due to shale rather than oil. Certain shales in Australia produce as high as 125 gallons of oil to a ton of shale.

Future Cost in United States

While the question of supply and demand will, of course, very largely govern future production in the United States, there is every indication that the cost of this production will increase. As an example, leases in Oklahoma oil fields have doubled in price within the last five years, and due to the necessity for deeper drilling, the average cost per well in the Mid-Continent Field, generally increased from $15,000 in 1915 to $25,000 in 1925. While the discoveries of new wells in isolated locations in shallow sands may produce cheaper oil, it is believed that the general trend will be toward higher average cost.

Cost of Foreign Crude

Topographical difficulties will play a large part in the cost of future foreign production, particularly in Northern South America. Much of this production is behind the Andes, requiring long pipe lines. Furthermore, the climate is bad, and the cost of labor is high, not only due to higher wages, but to the low efficiency of the individual. It is believed, however, that improved sanitation will materially relieve the situation in this respect. Distance from the base of supplies is also a serious factor, and the cost of well drilling generally is much higher than in the United States,. For instance, a well costing $40,000 in the United States, has for a similar depth, cost $125,000 in Panama. The same difficulties due to topography and climate are also encountered in the Dutch East Indies.

Use of Foreign Oil by United States

There will be, in spite of interference by foreign Governments, much foreign production which will be available for use in the United States. Indeed, we have already brought in enormous quantities of oil from Mexico. The use of this foreign oil, however, is entirely contingent upon prices. When the cost of domestic crude petroleum reaches a point where it is more economical to import foreign oil, foreign oil will be used in preference to domestic oil. Indeed, it has already been prophesied that the time will eventually come when our pipe lines, instead of transporting oil from the Mid-Continent to the Atlantic Seaboard, will transport oil from the Seaboard to the Mid-Continent

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For Alphabetical Index See Page 17

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Drills—Portable, Air—
Chicago Pneumatic Tool Co.

Drills—Portable Electric—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drop-Forged Wrenches (See Wrenches)—

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electric Apparatus (See Apparatus—Electric—

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Pumping and Pulling Motors (See Pumping and Pulling Motors—Electric)—

Electric Steel Castings — (See Castings—Electric Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
Foggan, Geo. N.

Enamels—
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Hope Engineering & Supply Co.
Kellogg, M. W. Co.
Power Specialty Co.
Westcott & Griess.

Engineers—Fire Protection—
Foamite-Childs Corp.

Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.

Engineers—Oil Treating—
Barnickel, Wm. S. & Co.

Engines—Crude Oil—
Power Mfg. Co.
Western Machinery Co.

Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines—Drilling—
Ajax Iron Works.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Continental Supply Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Lufkin Foundry & Machine Co.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

Engines—Gas—
Bessemer Gas Engine Co.
Bruce-MacBeth Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M. Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Gasoline—
Buda Co.
Buffalo Gasolene Motor Co.
Climax Engineering Corp.
Continental Motors Corp.
Fairbanks-Morse & Co.
International Harvester Co. of America.
Novo Engine Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

Engines—Rotary Steam—
Baker Motors, Inc.

Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.
Power Mfg. Co.

Engines—Steam—
Ajax Iron Works.
Baker Motors, Inc.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

Evaporators—
Newton Process Mfg. Co.

Expansion Pistons (See Pistons)—

Extinguishers—Fire—
Amdyce Corp.
Foamite-Childs Corp.

F

Fabricators for Gasoline Plants and Refineries—
Stearns-Roger Mfg. Co.

Fence—Chain Link—
Page Fence & Wire Products Association.

Filters—
Metric Metal Works.

Fire Extinguishers (See Extinguishers)—

Fishing Tools (See Drilling and Fishing Tools)—

Fish Tail Bits (See Bits)—

Fittings—Dropped Forged Steel—
Carbondale Machine Co.
Vogt, Henry, Machine Co.

Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Kelly & Jones Co.
Walworth Mfg. Co.

Fittings—Pipe—
American Cast Iron Pipe Co.
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Lufkin Foundry & Machine Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kelly & Jones Co.
Ohio Steel Foundry Co.
Pittsburgh Reinforced Brazing & Machine Co.

Flanges—Brass, Iron and Steel—
Kelly & Jones Co.
Metric Metal Works.

Flange Unions—
Gaso Pump & Burner Mfg. Co.

Flashlights—
Delta Electric Co.
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works
Columbian Steel Tank Co.

Floodlights—
Pyle-National Co.

Floor Circle Braces (See Braces)

Force Feed Lubricators (See Lubricators)—

Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

Forgings—
Champion Machine & Forging Co.
Milwaukee Forge & Machine Co.

Friction Clutch Pulleys (See Pulleys)—

Fuel Oil (See Oil—Fuel)—

G

Gas and Oil Gate Valves (See Valves)—

Gas Compressors (See Compressors—Gas)—

Gas Engines (See Engines—Gas)

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gas Meters (See Meters)—

Gas Oil (See Oil—Gas)—

Gasoline—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chesinut & Smith Corp.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Chicago Bridge & Iron Works.
Clark Brothers Co.
Kellogg, M. W., Co.
Marietta Mfg. Co.
Newton Process Mfg. Co.

Gas Regulator Casinghead—
Davis Regulator Co.

Gas Regulators—
Chaplin Fulton Mfg. Co.
Davis Regulator Co.
Fisher Governor Co.
Metric Metal Works.
Smith Separator Co.

Gas Scrubbers—
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.

Gauges—Automatic Tank—
Oil Conservation Engineering Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Foxboro Co., Inc.
Metric Metal Works.

Gauges—Test—
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Nuttall, R. D., & Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Steam—
Baker Motors, Inc.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glass Bottles (See Bottles, Glass)

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Dodge Mfg. Corp.

Hatches—Gauge and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
Newton Process Mfg. Co.
Southwestern Engineering Co., Inc.

Heat Interchangers—Fluid—
Braun, C. F. & Co.

High Pressure Gate Valves (See Valves)—

Hoists—Pneumatic, Geared and Universal—
Chicago Pneumatic Tool Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Well Pulling—
Emsco Steel Products Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F. Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hot Rolled Strip Steel (See Steel)

Hydraulic Gate Valves (See Valves)—

Hydraulic Jacks (See Jacks)—

I

Insulation Materials—
Celite Products Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Spang & Co.

Jars—
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Acme Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Skelly Oil Co.

L

Lacquers—
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lanterns—Hand—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lifting Jacks (See Jacks)—

Lighting Equipment—
Climax Engineering Co.
Pyle National Co.
Westinghouse Electric & Mfg. Co.

Liquid Level Controls (See Controllers)—

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricating Oils (See Oils)—

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Oil Conservation Engineering Co.

Manifolds—
Reid, Joseph, Gas Engine Co.

Metal Buildings Sectional (All Types (See Buildings)—

Meters—Gas—
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M. Co.
Westcott and Greis.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Goodyear Tire & Rubber Co.

Motor Controlled Apparatus (See Apparatus—Motor Control)—

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

Motor Trucks (See Trucks—Motor)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment
American Tank Co.
Chaplin-Fulton Mfg. Co.
Continental Supply Co.
Cooper, C. & G., Co.
Griscom-Russell Co.
Roots, P. H. & F. M., Co.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Engines, Semi-Diesel (See Engines—Semi-Diesel Oil)—

Oil Field Equipment—
Baash-Ross Tool Co.
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Boiler Works Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Trumble Gas Trap Co.

Oil Filters—
Burt Mfg. Co.

Oil—Fuel—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Gas—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Lubricating—
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pennzoil Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
The Texas Co.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.

Oil Refinery Equipment (See Refinery Equipment)—

Oil Savers—
Oil Well Improvements Co.

Oil Securities (See Securities)—

Oil Suction and Discharge Hose (See Hose)—

Oil Testing Instruments—
Tagliabue, C. J., Mfg. Co.

Oil Well Cementing—
Halliburton, Erle P.

Oil Well Screens (See Screens)—

Oil Well Tools—
Dunn Mfg. Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Star Drilling Machine Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Gulberson Corp.
Larkin & Co.
Layne & Bowler Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.

Packing—
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.
United States Rubber Co.

Paint Guns—
Binks Spray Equipment Co.

Paints—
Aluminum Co. of America.
Continental Supply Co.
Cook Paint & Varnish Co.
Detroit Graphite Co.
Eagle-Picher Lead Co.
Sherwin-Williams Co.

Paraffin Wax Plant Equipment—
Carbondale Machine Co.

Pipe—Cast Iron—
American Cast Iron Pipe Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.

Pipe—Steel—
Greenspon's, Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Son, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Pipe—Wrought Iron—
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
Superior Tube Co.

Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co., The.
Landis Machine Co.
Ryerson, Jos. T., & Son, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Fittings (See Fittings)—

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Ditchers (See Ditchers)

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threading Dies (See Dies)—

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.

Piping—Fabricated—
Kelly & Jones Co.
Midwest Piping & Supply Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Gulberson Corp.
Heppenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tools Corp.

Pistons—Slush Pump—
Gulberson Corp.

Plain End Pipe Couplings (See Couplings—Plain End Pipe)—

Plugs—Bottom Water—
Gulberson Corp.

Polish Rods (See Rods—Polish)—

Portable Drilling Rigs (See Rigs)

Power Pumps (See Pumps)—

Power Units—Portable (See Engines)—

Pre-Heaters—
Newton Process Mfg. Co.

Pulleys—Casing—
Bridgeport Machine Co.

Pulleys—Friction Clutch—
Havana Mfg. Co.

Pulleys—Wood, Iron and Steel—
Dodge Mfg. Corp.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axelson Machine Co.
Goulds Mfg. Co.
Jones, S. M., Co.
Myers, F. E., Bro. & Co.
Northern Equipment Co.
Oil Well Supply Co.
Prescott Co.
Waukesha Motor Co.

Pumping Hangers—
Bridgeport Machine Co.

Pumping Jacks (See Jacks)—

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Powers—
Aldrich Pump Co.
Bessemer Gas Engine Co.
Buda Co.
Climax Engineering Co.
Frick-Reid Supply Co.
Jones, S. M. Co.
Kansas City Hay Press Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Air Lift—
Ingersoll-Rand Co.

Pumps—Boiler Feed—
Ajax Iron Works.
Fairbanks-Morse & Co.
Gardner Governor Co.
Oil Well Supply Co.
Worthington Pump & Machinery Corp.

Pumps—Centrifugal—
American Well Works.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Aldrich Pump Co.
Bessemer Gas Engine Co.

Pumps—Electric—
Prescott Co.

Pumps—Fuel Oil Service—
Aldrich Pump Co.
Blackmar Rotary Pump Co.
Northern Fire Apparatus Co.

Pumps—Fuel Oil Transfer—
Aldrich Pump Co.

Pumps—Gear Driven—
Aldrich Pump Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

Pumps—Pipe Line—
Aldrich Pump Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Power—
Aldrich Pump Co.
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.

Myers, F. E. Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.
Worthington Pump & Machinery Corp.

Pumps—Refinery—
Aldrich Pump Co.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Kinney Mfg. Co.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Worthington Pump & Machinery Corp.

Pumps—Rotary—
Blackmer Rotary Pump Co.
Northern Fire Apparatus Co.
Roots, P. H. & F. M. Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Vogt Brothers Mfg. Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Worthington Pump & Machinery Corp.

Pumps—Water—
Aldrich Pump Co.
American Well Works.
Gaso Pump & Burner Mfg. Co.
Northern Fire Apparatus Co.
Prescott Co.

Purifiers—Oil Absorption—
Sharples Specialty Co.

Pyrometers—
Brown Instrument Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Toledo Pipe Threading Machine Co.

Ratchet Stocks and Dies—
Toledo Pipe Threading Machine Co.

Ratchet Wrenches (See Wrenches)

Reamers—
Bridgeport Machine Co.

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Metric Metal Works.

Refinery Equipment—
American Radiator Co.
Braun, C. F. & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W. Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross-Meehan Foundries.
Smith Separator Co.
Southwestern Engineering Co. Inc.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.

Refinery Pumps (See Pumps)—

Refractories—Furnace, Stills and Baffles—
Botfield Refractorise Co.

Refrigerating Machinery—
Carbondale Machine Co.
Climax Engineering Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co., Inc.
Oil Conservation Engineering Co.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
Bradford Rig & Reel Co.
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
Carnegie Steel Co.
Emsco Steel Products Co.
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

River Clamps (See Clamps)—

Rods—Polish—
Bradford Motor Works.
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

Rods—Valve—
Jones, S. M., Co.

Roofing—
Johns-Manville, Inc.

Roofing—Tin Plates (See Tin Plates—Roofing)—

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.
Wall Rope Works, Inc.

Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Bovaird Supply Co.
Broderick & Bascom Rope Co.
Bridgeport Machine Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons Rope Co.
Wickwire-Spencer Steel Corp.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Disc Bits (See Bits)—

Rotary Drilling Equipment—
Climax Engineering Co.
Continental Supply Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Drive Bushings (See Bushings—Rotary Drive)—

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Rock Bits (See Bits)—

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rotary Ventilators—(See Ventilators)—

Rubber Belting (See Belting)—

Rubber Hose (See Hose)—

Run Down Tanks (See Tanks)—

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Line Caps—
Oil Well Improvements Co.

Sand Lines—Manila—
Ajax Rope Co., Inc.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Wickwire-Spencer Steel Corp.

Sand Pumps (See Pumps, Sand)

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws—Temper—
Burns Tool Co.

Seamless Steel Couplings (See Couplings—Seamless Steel)—

Securities—Oil—
Pforzheimer, Carl H. & Co.

Separators—Centrifugal—
Miller, Max B. & Co.
Sharples Specialty Co.

Separators—Gas and Oil—
American Tank Co.
Smith Separator Co.

Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.

Sheets—Corrugated, Black and Galvanized
American Sheet & Tin Plate Co.
Ryerson, Jos. T. & Son, Inc.

Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.
Sheffield Steel Corp.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Slush Pump Pistons (See Pistons)—

Slush Pump—(See Pumps)—

Smoke Stacks—
Donovan Boiler Works.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Solders—Bar and Wire—
Eagle-Picher Lead Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.

Special Steel (See Steel Special)

Split Sleeves (See Sleeves)—

Sprockets—Power Transmission—
Ajax Iron Works.
Chain Belt Co.

Stationary Pipe Threading Die Heads (See Die Heads)—

Steam Pumps—(See Pumps)—

Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.

Steel—Alloy—
Central Steel Co.

Steel—Bit—
Central Steel Co.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Central Steel Co.

Steel Band Wheels (See Band Wheels—Steel)—

Steel Bridges—(See Bridges)—

Steel Bull Wheels—(See Bull Wheels—Steel)—

Steel Castings (See Castings)—

Steel Couplings for Casing, Line Pipe, Drill Pipe and Tubing (See Couplings)—

Steel Crown Blocks (See Crown Blocks)—

Steel Derricks—(See Derricks)—

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Fittings (See Fittings)—

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Slater Brothers Turnbuckle Derrick Co.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Boiler Works Co.
Petroleum Iron Works Co.
Tulsa Boiler & Machinery Co.
Vogt, Henry, Machine Co.

Steel Sheet—(See Sheets, Steel)—

Steel Valves (See Valves—Steel)—

Steel Walking Beams (See Walking Beams—Steel)—

Steel Wheels and Tug Rims—
Carnegie Steel Co.
Emsco Steel Products Co.
International Derrick & Equipment Co.

Stills—
Blaw-Knox Co.
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Boiler Works Co.
Kellogg, M. W. Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

Stocks and Dies—
Toledo Pipe Threading Machine Co.

Structural Steel Fabricators (See Steel Fabricators)—

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sucker Rods (See Rods—Sucker—

Suction Pumps—(See Pumps)—

Sulphuric Acid—
Eagle-Picher Lead Co.

Swab Rubbers—
United States Rubber Co.

Swabs—
Guiberson Corp.
Hoffman Mfg. Co.

Swedge Nipples—
Dresser, S. R. Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swing Joints—
Oil Conservation Engineering Co.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Cars (See Cars—Tanks)—

Tank Cars Leased (See Cars)—

Tank Equipment—
Oil Conservation Engineering Co.
Westcott & Greis.

Tanks—Bolted—
American Tank Co.
Butler Mfg. Co.
Gantz Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Columbian Steel Tank Co.
Graver Corp.

Tanks—Cylindrical—
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works.

Tanks—Field Storage—
American Car & Foundry Co.
American Tank Co.
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
Tulsa Boiler & Machinery Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Columbian Steel Tank Co.
Graver Corp.
Kaw Boiler Works Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works Co.
Newton Process Mfg. Co.

Tanks—Truck—
American Tank Co.
Butler Mfg. Co.
Columbian Steel Tank Co.
White Co.

Tanks—Underground—
Butler Mfg. Co.
Columbian Steel Tank Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tulsa Boiler & Machinery Co.

Tanks—Welded—
American Tank Co.
Chicago Bridge & Iron Works.
Gantz Tank Co.

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.

Tee Casing Heads (See Casing Heads)—

Temperature Controllers (See Controllers—Temperature)—

Temper Screws (See Screws)—

Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Foxboro Co., Inc.
Tagliabue, C. J., Mfg. Co.
Taylor Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tin Plates—Bright—
American Sheet & Tin Plate Co.

Tin Plates—Roofing—
American Sheet & Tin Plate Co.

Tires—Automobile—
Continental Supply Co.

Tongs—
Bridgeport Machine Co.
Dunn Mfg. Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Rooler Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Guiberson Corp.

Tongs—Chain Pipe—
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.

Tool Joint Tongs (See Tongs)—

Tools—Fishing and Drilling (See Drilling and Fishing Tools)—

Tools — Oil Well Drilling (See Drilling and Fishing Tools)—

Torches—
Oxweld Acetylene Co.

Tractor Oil (See Oil—Tractor)—

Tractors—
International Harvester Co. of America.
Rock Island Plow Co.

Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.

Trenches—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
General Motors Truck Co.
International Harvester Co. of America.
White Co.

Truck Tanks (See Tanks)—

Truck Tires (See Tires—Truck)—

Tubes—Boiler, Charcoal Iron—
Reading Iron Co.

Tubes—Boiler Steel—
National Tube Co.
Ryerson, Jos. T. & Son, Inc.

Tubing—
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Elevators (See Elevators, Casing and Tubing)—

Tubing Rings—
Oil Well Improvements Co.

Tubular Goods—
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.

Tubular Goods—Wrought Iron—
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Turbine Generators (See Generators—Turbine)—

Turnbuckle Derricks (See Derricks)—

U

Underground Tanks—(See Tanks)

Undercreamer Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Undercreamer Cutter Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Undercreamers—
Bridgeport Machine Co.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Continental Supply Co.
Kelly & Jones Co.

V

Vacuum Pumps (See Pumps)—

Valuations—
American Appraisal Co.

Valves—Blow-off—
Homestead Valve Mfg. Co.

Valves—Brass and Bronze—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Mfg. Co.

Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.

Valves—Check—
Chapman Valve Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.

Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves—Gate—High and Low Pressure—
Chapman Valve & Mfg. Co.
Continental Supply Co.
Crane Co.
Darling Valve & Mfg. Co.
Kelly & Jones Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.

Valves—Iron—
Lunkenheimer Co.
Reading Steel Casting Co.

Valves—Metal Pump—
Durabla Mfg. Co.

Valves—Relief—Supersensitive—
Davis Regulator Co.

Valves—Steel—
Edward Valve & Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Metric Metal Works.
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.
Reading Steel Casting Co.

Valves—Tank Vent—
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

Varnishes—
Sherwin-Williams Co.

Ventilators—Rotary—
Swartwout Co.

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Moore, Lee C., & Co., Inc.

Water Gauge Cocks (See Cocks)—

Water Pumps (See Pumps)—

Water Softeners and Filters—
Graver Corp.

Water Well Screens (See Screens)

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welded Tanks—(See Tanks)—

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Page Fence & Wire Products Association.
Wilson Welder & Metals Co.

Well Drilling and Fishing Tools—(See Drilling and Fishing Tools)—

Well Drilling Equipment (See Drilling Equipment)—

Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.

Wheels—Steel Automotive—
Budd Wheel Co.

Winches—
Braden Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel)—

Wire Rope (See Rope—Wire)

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
Bradford Motor Works.
D. & B. Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Northrup Equipment Co.
Oil Well Supply Co.

Working Barrel Valves (See Valves—Working Barrel)—

Wrenches—Drop Forged—
Williams, J. H., Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for October

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	4,346,820	140,220
Gulf Pipe Line Co.	822,895	26,545
Texas Pipe Line Co.	550,605	17,763
Magnolia Pet. Co.	1,075,461	34,692
Empire Pipe Line Co.	788,170	25,425
Cosden Pipe Line Co.	636,971	20,547
Sinclair Pipe Line Co.	1,422,900	45,900
*Other lines	8,773,000	283,000
Total October	18,416,822	594,092
Total September	18,220,224	607,340
Difference	196,598	13,248

Shipments

†Prairie Pipe Line Co.	3,990,645	128,731
Gulf Pipe Line Co.	1,202,285	38,799
Texas Pipe Line Co.	746,565	24,083
Magnolia Pet. Co.	1,337,817	43,155
Empire Pipe Line Co.	794,177	25,619
Cosden Pipe Line Co.	857,706	27,668
†Sinclair Pipe Line Co.	2,536,944	81,837
*Other lines	9,145,000	295,000
Total October	20,611,139	640,892
Total September	18,850,808	628,359
Difference	1,760,331	12,533

Stocks

*Prairie Oil & Gas Co.	26,822,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil	7,117,409
The Texas Co.	4,444,168
Magnolia Pet. Co.	6,682,552
Empire Pipe Line Co.	3,325,579
Cosden Pipe Line Co.	1,864,496
Sinclair Crude Oil Purchasing Co.	23,400,000
Carter Oil Co.	16,804,714
*Other lines	10,250,000
Total November	102,710,918
Total October	103,897,697
Difference	1,186,779

*Estimated. †Prairie shipments include Texas crude oil. Sinclair shipments include Texas and Wyoming crude oil.

Note: Stocks do not include 6,000,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES
Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct. '25	Nov. '25
Nat. Transit	160,485.98	143,528.17
S. W. Pa. Pipe	88,614.81	79,602.57
Eureka P. L.	369,811.62	318,323.70
Buckeye P. L. (Macksburg)	303,780.86	279,053.92
Buckeye P. L. (Cleveland)	13,981.45	11,352.78
Buckeye P. L. (Lima, etc.)	127,521.41	111,577.13
Indiana P. L.	9,506.89	9,162.90
Cumberland P. L.	292,906.37	279,943.21
N. Y. Transit	20,573.89	16,926.71
Tidewater P. L.	150,134.69	138,009.65
Pure Oil Co.	182,452.25	167,921.44
Emery P. L.	48,956.62	47,005.83
Indian Ref.	86,547.46	77,169.86
Paragon Dev.	28,236.35	28,936.17
Pittsburgh P. L.	7,323.62	.....
Total	1,890,833.27	1,708,514.04
Daily average	60,994.62	59,350.47

Note — Indian Refining Co. also reported other receipts of 331,423.81 bbls. Paragon Refining Co. had other receipts of 130,150.20 bbls. Paragon Development had other receipts of 2,251.89 bbls. Pure Oil had other receipts of 57,348.55 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct. '25	Nov. '25
Nat. Transit	397,576.55	372,376.37
S. W. Pa. Pipe	364,951.95	314,769.58
Eureka Pipe	135,027.77	148,352.61
Buckeye P. L. (Macksburg)	133,831.42	138,558.83
Buckeye P. L. (Cleveland)	969.15	971.65
Buckeye P. L. (Lima, etc.)	795,060.85	732,107.13
Indiana P. L.	995,708.07	963,608.00
Cumberland P. L.	157,874.91	161,755.20
Southern P. L.	651.00	.....
N. Y. Transit	466,894.84	482,743.87
Northern P. L.	73,874.32	87,808.44
Tidewater P. L.	175,398.69	83,545.87
Pure Oil Co.	244,061.70	195,068.59
Emery P. L.	48,308.05	49,512.02
Paragon Ref.	98,916.25	146,231.80
Indian Ref.	378,805.98	399,459.91
Paragon Dev.	32,046.70	30,598.39
Pittsburgh, P. L.	7,077.88	.....
Total	4,507,036.03	4,307,468.26
Daily average	145,388.26	143,582.27

Note—Paragon Development had other deliveries of 525.69 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of October and November were as follows:

	Oct. '25	Nov. '25
Nat. Transit	964,802.37	1,018,157.25
S. W. Pa. Pipe	721,496.86	724,911.17
Eureka P. L.	1,492,661.69	1,488,359.27
Buckeye P. L. (Macksburg)	244,229.22	212,926.26
Buckeye P. L. (Cleveland)	57,105.89	67,286.51
Buckeye P. L. (Lima, etc.)	3,509,002.32	3,637,920.88
Indiana P. L.	595,464.31	572,199.94
Cumberland P. L.	571,941.31	554,266.94
Southern P. L.	528,343.58	538,905.79
N. Y. Transit	812,350.18	754,325.86
Northern P. L.	735,413.58	629,014.12
Pure Oil Co.	355,376.69	382,570.80
Emery P. L.	26,957.36	23,903.97
Paragon Ref.	200,996.85	184,346.81
Indian Ref.	260,559.26	273,076.94
Paragon Dev.	5,428.40	5,986.04
Pittsburgh P. L.	4,720.44	.....
Total	11,086,850.31	11,068,157.65
Increase	305,097.25	*18,692.66

*Decrease.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of October and November showing the gross stocks of the above fields:

	Oct. '25	Nov. '25
Pennsylvania	3,842,909.85	3,918,163.14
Lima	1,135,862.12	1,118,238.47
Kentucky	1,143,060.43	1,181,746.10
Mid-Continent	4,850,093.71	4,770,274.01
Illinois	114,924.20	79,735.93
Total	11,086,850.31	11,068,157.65

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1922	1923	1924	1925
January	67,702	75,790	62,638	56,831
February	75,096	71,092	68,023	60,606
March	78,531	76,592	68,723	60,575
April	75,462	75,614	71,068	63,062
May	77,592	77,365	63,942	59,217
June	76,193	77,593	63,230	61,270
July	76,435	71,879	64,208	62,639
August	79,387	76,910	59,942	59,686
September	78,512	72,358	62,930	62,510
October	77,209	76,259	64,970	60,995
November	75,313	70,762	66,282	59,350
December	73,351	69,271	55,814	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1922	1923	1924	1925
January	119,792	171,067	145,518	157,889
February	111,362	164,219	148,732	160,863
March	127,753	185,487	147,098	154,591
April	127,068	170,751	147,611	151,429
May	127,840	177,102	134,997	146,995
June	137,638	173,598	143,010	149,467
July	137,872	168,330	124,187	161,338
August	153,275	142,766	123,120	161,730
September	158,761	137,266	127,325	156,719
October	165,345	134,597	123,170	145,388
November	165,677	131,426	124,400	143,582
December	172,861	139,909	151,392	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines, at the close of each month for the past three years:

January	14,040,567	12,907,202	11,353,276
February	14,028,437	11,844,068	11,152,924
March	13,873,146	10,906,752	11,158,397
April	13,737,575	10,922,742	11,062,082
May	13,815,622	11,335,309	11,207,562
June	14,541,253	11,544,204	11,093,796
July	14,645,584	12,062,361	11,067,453
August	14,770,539	12,221,676	10,974,481
September	14,803,444	12,206,836	10,7[illegible]1,753
October	14,504,111	12,664,061	11,086,856
November	14,157,726	12,267,830	11,068,158
December	13,444,361	11,583,680	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1924—	Receipts	Shipmts.	Stocks
October	3,342.40	1,880.50	14,590.32
November	2,700.13	482.89	12,427.56
December	3,120.34	2,659.13	12,888.77
1925—			
January	1,730.86	1,681.15	12,938.48
February	2,702.05	4,564.70	11,075.83
March	3,177.21	2,354.30	11,898.74
April	3,040.41	1,780.11	13,159.04
May	2,814.99	5,719.90	10,254.13
June	3,052.75	1,221.83	12,085.05
July	2,639.34	3,174.10	11,550.29
August	3,216.97	1,577.99	13,189.27
September	2,929.99	5,352.05	10,767.21
October	2,869.75	1,499.34	12,137.62

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, December	2,004,202.01
Runs from wells	635,522.87
Other receipts	493,167.76
Regular deliveries	476,103.17
Other deliveries	584,027.32

The amount of Illinois oil run by the Tidewater Pipe Co. in November was 29,033.43 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1924—	Runs	Deliveries
November	650,147.63	521,459.21
December	640,919.23	595,942.28
1925—		
January	695,513.43	572,304.77
February	636,635.20	514,661.52
March	754,335.68	611,348.49
April	622,866.14	637,242.85
May	692,671.94	568,573.62
June	700,090.46	589,535.24
July	724,481.26	564,713.19
August	673,652.38	650,649.97
September	706,434.87	510,697.61
October	706,532.00	633,682.32
November	664,556.30	488,449.19

The Tidewater Pipe Co., Ltd., also delivered in November, 205,948.17 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 301,840.06.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per week—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	
August	25,515	68,432	223,097	35,000	92,806	444,850	.....	35,903	.....	4,067	39,970	484,820
September	17,269	35,931	212,100	86,569	89,600	441,469	.....	36,869	.....	.....	36,869	478,338
October	21,455	29,806	143,388	68,642	41,321	304,612	.....	.....	.....	.....	.....	304,612
November	50,869	68,131	103,131	93,331	66,269	381,731	.....	.....	36,400	5,831	42,231	423,962

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per week—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	
August	70,455	62,097	326,515	107,933	175,224	742,224	147,224	228,291	18,515	29,358	423,388	1,165,612
September	70,700	41,531	289,331	61,600	194,531	657,693	115,500	168,469	37,800	14,700	336,469	994,162
October	149,709	94,836	275,933	44,030	160,755	726,291	175,000	207,736	13,452	20,321	416,812	1,142,103
November	136,969	30,331	331,100	70,910	241,731	811,041	91,231	191,569	54,369	43,400	380,569	1,191,610

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS

1924—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountain	Eastern Fields	Total
November:	Month	17,767,034	15,955,620	10,731,264	2,597,460	3,461,050	1,965,921	2,788,110	2,941,000	58,207,459
	Daily average	592,224	531,854	357,709	86,582	115,035	65,531	92,937	98,033	1,940,248
December:	Month	18,795,126	16,031,185	11,264,915	2,537,443	3,380,511	1,870,876	2,302,888	3,000,850	59,183,794
	Daily average	606,294	517,135	363,384	81,853	109,049	60,351	74,287	96,402	1,909,155
1925—										
January:	Month	18,743,288	15,462,800	13,790,195	2,250,858	3,278,484	1,774,072	3,627,676	3,065,993	61,263,366
	Daily average	604,622	498,800	444,845	81,318	105,758	57,228	84,760	98,903	1,976,238
February:	Month	16,869,833	13,905,780	11,361,896	2,466,660	2,886,296	1,647,461	2,666,335	2,905,000	54,609,261
	Daily average	602,494	496,635	405,782	88,095	103,082	58,265	95,226	103,750	1,950,333
March:	Month	18,626,009	14,403,716	13,047,068	2,824,534	3,564,473	1,807,517	2,734,235	3,282,000	60,289,552
	Daily average	600,839	464,636	420,886	91,114	114,983	58,307	88,201	105,871	1,944,502
April:	Month	17,959,653	14,065,450	12,683,520	2,971,110	7,560,240	1,695,780	2,744,691	3,157,000	62,927,444
	Daily average	598,655	468,515	422,784	99,037	252,008	56,526	91,490	107,150	2,026,691
May:	Month	18,820,328	14,486,579	13,165,005	3,493,266	11,813,996	1,887,729	2,799,542	3,167,300	69,633,745
	Daily average	607,107	467,309	424,678	112,686	381,097	60,572	90,308	102,171	2,246,250
June:	Month	19,288,135	13,932,970	12,583,740	3,175,440	9,200,372	1,900,506	2,754,498	3,389,000	66,124,661
	Daily average	642,938	461,099	419,458	105,848	306,679	63,350	91,816	109,000	2,133,053
July:	Month	20,411,049	14,263,565	12,390,917	3,686,675	7,835,819	1,898,178	3,129,199	3,348,000	66,963,403
	Daily average	658,021	460,115	396,804	118,925	252,768	61,231	100,942	108,000	2,160,110
August:	Month	21,005,580	14,441,040	11,919,066	3,658,087	7,450,571	1,843,043	3,168,014	3,177,004	66,562,405
	Daily average	677,599	465,840	384,486	114,777	240,341	59,453	102,194	102,484	2,147,159
September:	Month	20,062,763	14,335,040	11,224,830	3,393,270	6,457,950	1,782,870	3,138,300	3,212,000	64,097,023
	Daily average	668,759	494,168	374,161	113,109	215,965	59,429	104,458	107,067	2,136,567
October:	Month	20,015,076	14,921,199	11,378,332	3,477,146	6,409,281	1,872,121	3,294,500	3,379,000	64,846,656
	Daily average	645,648	481,329	367,043	112,166	206,751	60,391	109,500	109,000	2,161,555
	Total 12 months	228,363,874	176,584,944	145,540,749	36,701,949	73,299,043	21,846,074	34,247,988	38,124,147	754,708,768
	Daily average	625,654	483,794	398,742	100,553	200,819	59,852	93,830	104,450	2,067,696

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co. 15
Acme Petroleum Co. . . . . .
Ajax Iron Works. . . . . .
Ajax Rope Co. . . . . .
Aldrich Pump Co. 135
Alexander, Clive M. 139
Aluminum Co. of America. . . . . .
Amdyco Corporation . . . . . .
American Appraisal Co. 115
American Asphalt Paint Co. 62
American Cable Co. . . . . .
American Car & Foundry Co. . . . . .
American Cast Iron Pipe Co. . . . . .
American Radiator Co. . . . . .
American Schaeffer & Budenburg Corp. 76
American Sheet & Tin Plate Co. . . . . .
American Spiral Pipe Works. 135
American Tank Co. 101
American Telephone & Telegraph Co. . . . . .Inside Front Cover
American Well Works. . . . . .
Anderson & Anderson. 140
Anderson, Carl B. 138
Andrews Steel Co. 109
Armstrong Bros. Tool Co. 136
Arnold, J. F., & Co. . . . . .
Athey Truss Wheel Co. . . . . .
Atlas Ball Co. 74
Auer, C. A. 140
Austin Co. . . . . .
Axelson Machine Co. 64

B

Baash-Ross Tool Co. . . . . .
Baker Casing Shoe Co. . . . . .
Baker Motors, Inc. . . . . .
Barber-Greene Co. 6
Barnickel, Wm. S., & Co. 81
Barnsdall Refining Co. 8
Bartlesville Supply Co. 66
Beaver Mfg. Co. 65
Berry's, James B., Sons Co. . . . . .
Bessemer Gas Engine Co. 37
Bignall & Keeler Machine Works. . .
Binks Spray Equipment Co. . . . . .
Blackmer Rotary Pump Co. 139
Black Steel & Wire Co. . . . . .
Blaw-Knox Co. . . . . .
Borden Co. 106
Botfield Refractories Co. 112
Bovaird & Seyfang Mfg. Co. 107
Bovaird Supply Co., The. . . . . .
Braden Co. 63
Braun, C. F., & Co. . . . . .
Bridgeport Machine Co. . . . . .Back Cover
Bristol Co. 105
Broderick & Bascom Rope Co. . . . . .
Brokaw, Dixon, Garner & McKee. .140
Brown Instrument Co. . . . . .
Brown & Thomsen. 138
Bruce-MacBeth Engine Co. . . . . .
Buckeye Traction Ditcher Co. . . . . .
Buda Co. . . . . .
Budd Wheel Co. . . . . .
Buffalo Gasolene Motor Co. 71
Burns Tool Co. . . . . .
Burt Manufacturing Co. 106
Busch-Sulzer Bros. Diesel Engine Co.
Butler Manufacturing Co. . . . . .

C

Cable, Jo. H. 140
Capital Abstract & Realty Co. 137
Carbondale Machine Co. 88
Caudill, Samuel J. 138
Celite Products Co. . . . . .
Central Steel Co. . . . . .
Chain Belt Co. . . . . .
Champion Machine & Forging Co. . . .
Chaplin-Fulton Manufacturing Co. . .135
Chapman Valve Manufacturing Co. .
Chestnut & Smith Corp. 87
Chicago Bridge & Iron Works. . . . . .
Chicago Pneumatic Tool Co. 5
Chicago Steel Foundry Co. . . . . .
Clapp, Frederick G. 138
Clark Bros. Co. . . . . .
Clark, Robert W. 140
Classified Wants 110-111
Climax Engineering Co. 94
Coatesville Boiler Works. . . . . .
Columbian Rope Co. . . . . .
Columbian Steel Tank Co. . . . . .
Columbus Forge & Iron Co. 140
Columbus Sucker Rod Co. . . . . .
Continental Motors Corp. 89
Continental Supply Co. 49
Cook Paint & Varnish Co. . . . . .
Cooper, C. & G., Co. . . . . .
Cox & Sons Co., The. . . . . .
Crane Co. 16
Crane Packing Co. . . . . .
Crown Central Petroleum Corp. . . . .
Cunningham Co. . . . . .

D

D. & B. Pump & Supply Co. 105
Darling Valve & Manufacturing Co. . 75

D

Dart, E. M., Manufacturing Co. . . . .
Davis, G. M., Regulator Co. 129
Dawson Towel Supply Co. 137
Day, Roland B. 139
Dayton Pipe Coupling Co. . . . . .
Dean Bros. Co. 138
Dean Hill Pump Co. 138
Dearborn Chemical Co. . . . . .
De La Vergne Machine Co. . . . . .
Delta Electric Co. . . . . .
Detroit Graphite Co. . . . . .
Diamond Drill Carbon Co. 140
Diamond Drilling & Exploration Co. .139
Diamond Power Specialty Corp. . . . . .
Dickey-Ashby-Fountain Co. 137
Dixon, Joseph, Crucible Co. 112
Dodge Manufacturing Co. . . . . .
Donovan Boiler Works, Inc. . . . . .
Dresser, S. R., Manufacturing Co. . . 27
Dunn Manufacturing Co. . . . . .
Durabla Mfg. Co. . . . . .

E

Eagle Picher Lead Co. 3
Eastern Torpedo Co. 136
Edward Valve & Manufacturing Co.
Empire Refineries, Inc. . . . . .
Emsco Derrick & Equipment Co. . . .
Equitable Meter Co. . . . . .

F

Fairbanks-Morse & Co. . . . . .
Farley Machine Works Co. . . . . .
Federal Supply Co. . . . . .
Fenwick-Reddaway Mfg. Co. . . . . .
Fisher Governor Co. 139
Fleming, Martin, Undertaking Co. . .137
Foamite-Childs Corp. . . . . .
Foggan, George N. . . . . .
Fohs, F. Julius. 139
Foos Gas Engine Co. . . . . .
Fort Worth Laboratories. 138
Foxboro Co., Inc., The. 92
Franklin Valveless Engine Co. . . . . .
Freeborn, F. W., Engineering Co. . . .140
Frick-Reid Supply Co. 43
Full Crawler Co. . . . . .

G

Gardner Governor Co. 9
Garlock Packing Co. . . . . .
Garrett, M. M. 140
Gaso Pump & Burner Manufacturing Co. . . . . .Inside Back Cover
General American Tank Car Corp. . .
General Motors Truck Co. . . . . .
Gomory, W. L. 140
Goodrich, B. F., Rubber Co. . . . . .
Goodyear Tire & Rubber Co. 90
Gott, H. P., Manufacturing Co. 135
Goulds Manufacturing Co. 136
Graver Corp. . . . . .Front Cover
Greene, Frank C. 139
Greenspon's, Joseph, Sons Iron & Steel Co. . . . . .
Griscom-Russell Co. 13
Guiberson Corp. 10
Gulf Refining Co. . . . . .

H

Halliburton, Erle P. 4
Harrisburg Pipe & Pipe Bending Co. 69
Hazard Manufacturing Co. . . . . .
Henry, George W. 137
Heppenstall Forge & Knife Co. . . . . .
Herald Brothers 140
Hercules Motors Corp. . . . . .
Heydrick Mapping Co. 137
Hills-McCanna Co. . . . . .
Hinderliter Tool Co. . . . . .
Hoffman Manufacturing Co. . . . . .
Homestead Valve Manufacturing Co.
Hood, H. H. 140
Hoover Steel Ball Co. . . . . .
Hope Engineering & Supply Co. 100
Hopkins, Edwin B. 139
Hough, Charles N., Mfg. Co. . . . . .
Houston Pump & Supply Co. . . . . .
Hughes Tool Co. 57-120
Hunt, Robert W., Co. 140
Huntley & Huntley 138

I

Illinois Glass Co. . . . . .
Imperial Belting Co. 107
Imperial Royalties Co. . . . . .
Ingersoll-Rand Co. 128
International Derrick & Equipment Co. 52-53
International Harvester Company of America 95
International Supply Co. . . . . .
Iron King Manufacturing Co. 109

J

Jarecki Manufacturing Co. . . . . .
Johns-Manville, Inc. 51
Jones, S. M., Co. 137

K

Kansas City Hay Press Co. 136
Kaw Boiler Works Co. . . . . .
Kellogg, M. W., Co. 131
Kelly, John Eoghan 138
Kelly & Jones Co. 140
Kennedy Valve Manufacturing Co. . .
Kerr, John B. 139
Kewanee Boiler Co. . . . . .
Kinney Manufacturing Co. . . . . .
Kirk & Hoover 138

L

Lafe Speer Abstract Co. 137
Landis Machine Co. . . . . .
Larkin & Co. . . . . .
Layne & Bowler Co. . . . . .
Leidecker Tool Co. 85
Leschen, A. & Sons Rope Co. . . . . .
Linde Air Poducts Co. 1
Link-Belt Co. 11
Longhart Supply Co. . . . . .
Longyear, E. J., Co. 139
Lucey Manufacturing Corp. . . . . .
Ludlow Valve Manufacturing Co. . . . .
Lufkin Foundry & Machine Co. . . . . .
Lufkin Rule Co. . . . . .
Lunkenheimer Co. . . . . .

M

Magnolia Petroleum Co. 12
Maloney Tank Mfg. Co. 97
Manzel Brothers Co. . . . . .
Marion Machine Foundry & Supply Co. . . . . .
Marsh Gauge Po'e Co. 136
Matson, George C. 128
Messimer, H. H. 138
Metric Metal Works. . . . . .
Midwest Piping & Supply Co. . . . . .
Miller Improved Gas Engine Co. . . .
Miller, Max B., & Co., Inc. 79
Milwaukee Forge & Machine Co. . . .137
Mineral Exploration Co. 132
Mine Safety Appliance Co. . . . . .
Monarch Cement Co. . . . . .
Moon Manufacturing Co. 135
Moore, Lee C., & Co., Inc. 39
Mosler Metal Products Corp. . . . . .
Munn & Co. 137
Murray Rubber Co. . . . . .
Myers, F. E., & Bro. Co. 108

Mc

McCord Radiator & Mfg. Co. 107
McGregor Working Barrel Co. . . . . .
McIntosh & Seymour Corp. 77
McNutt, V. H. 139

N

National Carbon Co., Inc. 1
National Lead Co. . . . . .
National Petroleum Engineering Corporation 139
National Petroleum Marketers' Association . . . . . .
National Supply Co. 29
National Transit Pump & Machine Co. 80
National Tube Co. . . . . .
National Turnbuckle Derrick Co. . .
Newton Process Mfg. Co. 25
Norris Brothers, Inc. 133
North American Car Co. 132
Northern Fire Apparatus Co. . . . . .
Northern Oil Information Bureau. .137
Northrup Equipment Co. . . . . .
Novo Engine Co. . . . . .
Nugent Steel Castings Co. 138
Nuttall, R. D., & Co. 132
Nye Tool & Machine Works. 7

O

O'Brien Steel Construction Co. 133
Ohio Steel Foundry Co. . . . . .
Oil Conservation Engineering Co. . . .
Oil Country Specialties Mfg. Co. . . .
Oil Insurance Association. . . . . .
Oil Well Supply Co. 72-73
Okmulgee Boiler & Welding Works. .
Oster Manufacturing Co. . . . . .
Oxweld Acetylene Co. 1

P

Page Fence & Wire Products Association . . . . . .
Parkersburg Machine Co. . . . . .
Parkersburg Rig & Reel Co. . . . . .
Patrick, R. S. 133
Pattin Brothers Co. 55
Pennzoil Co., The. . . . . .
Petroleum Iron Works. . . . . .
Pforzheimer, Carl H., & Co. . . . . .
Pickering Governor Co. 137
Pittsburgh-Des Moines Steel Co. . . . 78
Pittsburgh Meter Co. 134
Pittsburgh Reinforced Brazing Machine Co. . . . . .
Powell, William, Co. . . . . .
Power Manufacturing Co. 86
Power Piping Co. 140

P

Power Specialty Co. . . . . .
Prescott Co., The. . . . . .
Prest-O-Lite Co., The 1
Progressive Brass Mfg. Co. . . . . .
Pure Oil Co. 93
Pyle-National Co. 70

R

Ratigan, J. P., Co. . . . . .
Reading Iron Co. 59
Reading Steel Castings Co., Inc. . . .
Reed Roller Bit Co. 61
Regan Forge & Engineering Co. . . . .
Reid, Joseph, Gas Engine Co. 84
Republic Iron & Steel Co. 98
Republic Supply Co. . . . . .
Rich, John L. 138
Ring, DeWitt T. 140
Riter-Conley Co. 139
Rock Island Plow Co. . . . . .
Roots, P. H. & F. M., Co. . . . . .
Ross-Meehan Foundries 138
Ryerson, Joseph T., & Son. 136

S

Safety Pulling Machine Co. . . . . .
Saunders Bros. . . . . .
Sharples Specialty Co. . . . . .
Sheffield Steel Corp. . . . . .
Sherwin-Williams Co. . . . . .
Shippers' Car Line, Inc. 134
Sinclair Refining Co. 125
Sivyer Steel Casting Co. 83
Skelly Oil Co. . . . . .
Slater Bros. Turnbuckle Derrick Co.
Smith, Gene R. 139
Smith Separator Co. 45
South Chester Tube Co. 2
Southern Cornice Works. . . . . .
Southwestern Engineering Co., Inc. .
Spang & Co. . . . . .
Spang, Chalfant & Co. 31
Spellman, John M. 137
Spence Machine Co. 137
Spengler Core Drilling Co. . . . . .
Stalder, Walter 139
Standard Engineering Co. . . . . .
Stanley Belting Corp. . . . . .
Star Drilling Machine Co. . . . . .
Stearns-Roger Mfg. Co. . . . . .
Strom Steel Ball Co. . . . . .
Sullivan Diamond Core Drills. 138
Sullivan Machinery Co. . . . . .
Superior Tube Co. 47
Swartwout Co., The. . . . . .

T

Tagliabue, C. J., Mfg. Co. . . . . .
Taylor Instrument Co. 131
Templeton, Kenley & Co., Ltd. . . . . .
Texas Co., The. 82
Thompson, V. A. 139
Titusville Forge Co. 90
Titusville Iron Works. . . . . .
Toledo Pipe Threading Machine Co. .108
Trimont Manufacturing Co. . . . . .
Trumble Gas Trap Co. . . . . .
Truscon Steel Co. . . . . .
Tulsa Boiler & Machinery Co. . . . . .
Tulsa Ice Co. 137

U

Union Machine Co. . . . . .
United Iron Works, Inc. 68
United States Cast Iron Pipe & Foundry Co. . . . . .
United States Rubber Co. . . . . .
Universal Oil Products Co. 35
U. S. Tool Co. . . . . .

V

Vogt Brothers Manufacturing Co. . .
Vogt, Henry, Machine Co. . . . . .

W

Wall Rope Works, Inc. 104
Walsh & Weidner Boiler Co. . . . . .
Walworth Manufacturing Co. 67
Waukesha Motor Co. 41
Westcott & Greis 103
Western Machinery Co. . . . . .
Westinghouse Electric & Manufacturing Co. . . . . .
White Co. . . . . .
Wickwire Spencer Steel Co. . . . . .
Wico Electric Co. . . . . .
Williams, J. H., & Co. 140
Wilson Oil Tools Corp. . . . . .
Wilson Welder & Metals Co. . . . . .
Wood & Wood. 138
Worthington Pump & Machinery Corporation . . . . . .
Wright Manufacturing Co. 129
Wright, Harry F. 140

Y

Yale & Towne Manufacturing Co. . . 91

Z

Zero Hour Torpedo Co. . . . . .

WHAT AND WHERE TO BUY—PAGES 141-142-143